Goodwood

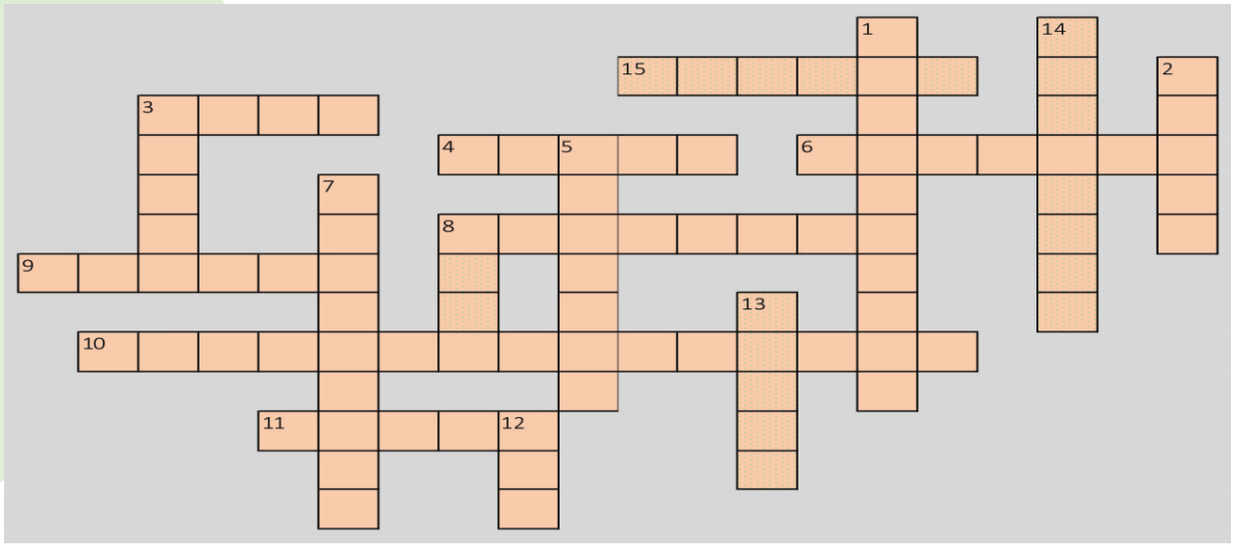
FORESIGHT

Double rainbows are formed when sunlight is reflected twice within a raindrop with the violet light that reaches the observers eye coming from the higher raindrops and the red light from lower raindrops. DHT Edelweiss captured this breath taking view of a double rainbow while discharging her carried cargo at Kaohsiung SBM – Taiwan on 21st August 2020.

NEWSLETTER CONTENTS

SEPTEMBER 2020 EDITION

CROSSWORD PUZZLE



Across

3. Emergency escape breathing device
4. Permit form required for all enclosed space entries
6. Responsibility of standby person
8. "_____ " when levels reach alarm point
9. 20.8% to 21% is the safe range of this gas
10. Protector of spaces where someone can fall through
11. Method of communication
15. Rescue Equipment standby

Down

1. Signage required at the opening of an enclosed space
2. Minimum number of air changes per hour for cargo tank
3. Body breaks the plane of an enclosed space
5. A person stationed outside
7. Fans required to do this
8. Alternative for EEBD
12. The standby person notifies this person when enclosed space entry work begins and ends
13. Regulations to carry out Bi-Monthly
14. Enclosed space entry is a "_____" Operation

Compiled by : Pratik Vallabhbhai Malani - 3rd off. and Benjamin Cabantog Abadier - Bosun of M.T. Zeno

IMPORTANCE OF HOUSEKEEPING

There is no phrase called "Good Housekeeping". There is only one word called housekeeping which is explained below. Our MOTTO is to have a clean and safe work place at all times instead of just preparing before days of inspection.

Here are some results of poor housekeeping practices:
Poor housekeeping causes Injuries – Crew may trip, fall, be struck or strike due to objects kept out of the place.

Injuries caused by using improper tools because the correct tool has been misplaced.

Productivity lost because valuable time spent searching for proper tools and materials.

Time spent in reporting accidents and investigating could have been used for other valuable cause.

Fire may happen due to improper storage and disposal of flammable or combustible materials and wastes.

Third party inspections will seriously view the poor housekeeping as total failure of shipboard team and safety culture onboard. Any serious observations by inspectors about safety issues will affect the vessel employment and in turn loss of company's business.

General housekeeping rules to follow:
Always keep our work area clean while doing the job. This will minimize the amount of time needed to clean a "Larger Mess"at end of the day.

Dispose all combustibles and flammable items properly. If improperly discarded, they can be potential cause for fire.

Pick up your trash / debris and dispose of it properly or place it where they will not pose a hazard to others.

Remove protruding nails and other sharp objects by hammering them flat to prevent causing injury to others.

Always stack spares and stores in orderly manner and secure them so that they won't topple. Take proper inventory and tag them individually. Critical spares are to be kept in separate racks.

AS SAYING GOES, YOU WILL NEVER GET A SECOND CHANCE TO MAKE A FIRST IMPRESSION.

Contributed by: Mr. Saravanan Paramasivam (2nd Engineer)

IMPLEMENTATION OF SAFETY CULTURE ON GOOD WOOD SHIPS

IMPLEMENTATION of the Safety Culture depends on the maturity of the link between how shipboard tasks should be done and how they are actually done. This can only be possible if **ships staff can be proactive** in ridding dangerous behaviors and starting anew.

"One hand for the ship, one hand for yourself."

The behavioural pattern of individuals in similar settings, place and environment can never be accurately predicted. There will always be someone who will manage to hit himself when using a hammer, slip on wet decks or otherwise injure themselves in part of a day's work resulting in a minor bruise or mild sprain and under certain circumstances have the potential to cause career threatening / life threating injuries.

Running a 'Safety Campaign' leads to a proliferation of extra warning signs, cordons and tiger stripes which results in them losing their effectiveness over time and when there is a crew change we have to start from scratch all over again.

- Change safety culture and you improve the 90% contributing factor **not only to incidents but also to risks** waiting to materialize

Patterns of behavior :

- Not holding the handrail
- Not following the procedure
- Not doing proper task risk assessment
- Taking a shortcut
- Not attending training
- Superficially involved in HSQE
- Relying on luck

Crew must not put themselves into a hazardous situation just to get a job done, ignoring basic safety precautions for simple convenience and putting themselves into danger. In order to prevent an accident follow these **SEVEN** simple steps :

1. Respect your work place.
2. Don proper PPE.
3. Follow the above adage, 'one hand for the ship and one hand for yourself'.
4. Observe the 'Three points of contact' rule.
5. Banish the myth, 'it will never happen to me'; 'we have always done it this way'.
6. Nominated Safety Representatives to constantly look for 'Unsafe Acts' and exercise, 'Stop Work Authority' to prevent an accident.
7. During ship rounds, all staff to look for 'Unsafe Conditions' and have them rectified asap.

In conclusion -

Safety Culture has been a buzz word in the industry for a very long time.

Goodwood's MISSION is to pursue the goal of No harm to People, Zero Incidents and Zero spills to the environment.

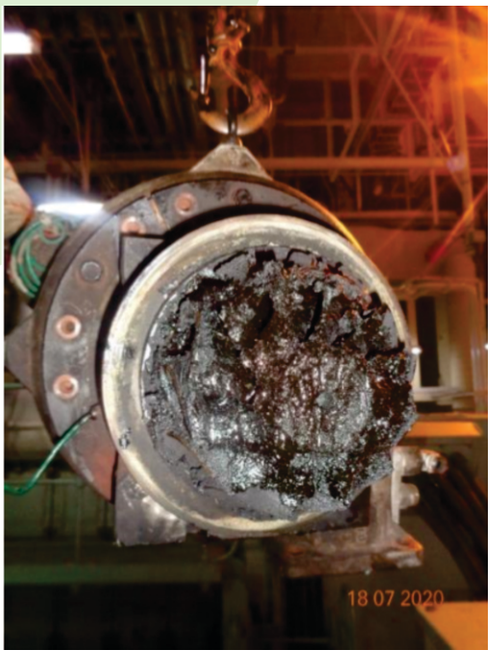
Contributed by: HSQE Department

AUX ENGINE TURBOCHARGER MAINTENANCE

Turbocharger (T/C) is one of the most vital components of an Aux engine. It is a very high speed component and utmost care must be taken of it. There are various types of operational issues / defects / breakdowns faced during operation of Aux engine T/C.

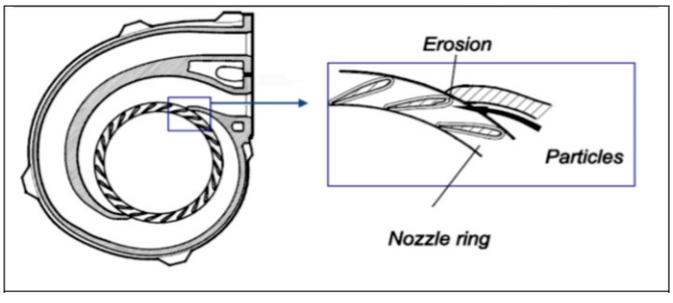
Most common types of defects and damages experienced during service of generator are listed below:

1. Fouling of turbine blades
2. Wear down of nozzle ring



T/C operated on HFO are exposed to fouling and deposits originating from exhaust gas. The extent of fouling depends on various factors such as fuel quality, engine operating condition or combustion quality. Fouling reduces T/C efficiency resulting in higher exhaust temperature and increased fuel consumption. The fouling without proper maintenance can be very detrimental to the engine. Example of worst case of fouling of turbine side is shown here.

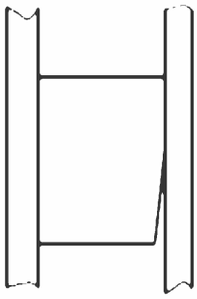
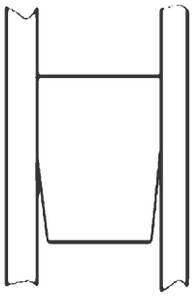
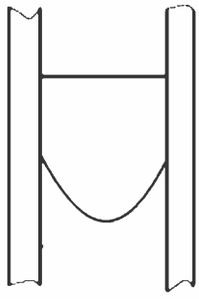
Other than fouling, erosive wear of turbine nozzle ring is very common defect found in AE T/C.



Normally the wear on nozzle ring occurs in the form of abrasion, and it is concentrated on nozzle ring vanes close to tongue of turbine casing as shown here.

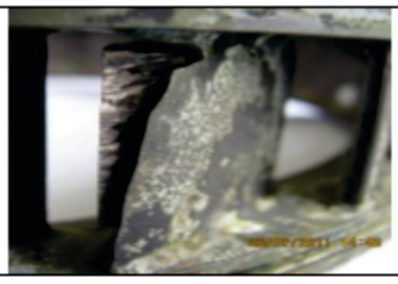
Normal life of nozzle ring is around 12,000 hours, but depending on condition it may need to be replaced earlier. Every time nozzle ring is removed it must be checked for wear and tear before reinstallation. Some Makers recommend to reinstall the nozzle ring, that are reusable, by turning it 120 deg from its previous position.

Few pictures are given as reference to decide if nozzle ring can be reused or it is to be discarded:

Can still be used		Replace
Wear pattern 1	Wear pattern 2	Wear pattern 3
		

Few examples of extraordinarily worn nozzle rings:



MAINTENANCE OF AE TURBOCHARGER

To know the method and interval of maintenance or precautions to be taken, always Maker's instructions manual is to be followed.

Maintenance interval will be different for different Makes and Models. However, maintenance interval needs to be reduced based on following conditions:

a. Low load operations
b. Poor quality of fuel
c. Very frequent start stop process
d. Very frequent load changes on generator
e. Poor quality of lube oil

In general, maintenance carried out on AE T/C are below

a. Water washing of turbine nozzle
b. Mechanical cleaning of T/C components
c. Water washing of compressor wheel
d. Major overhauling of T/C

1.Cleaning of Turbine side:

During operation on HFO, deposits accumulate on turbine nozzle ring and turbine wheel, which may lead to drop in efficiency of T/C. Hence, it is important to carry out regular washing of turbine side of AE T/C to clear off the deposits on turbine nozzle ring and turbine wheel. Recommended washing interval for HFO operation is around 300 hrs. However, depending on the condition and operating conditions, it may be varied from 25 to 600 hrs.

There are different procedures for carrying out water washing of turbine side of T/C. There is no universal method and strictly the procedure recommended by Maker should be followed. Generally there is lot of confusion whether water should come out of the drain of turbine casing or no, which is again as recommended by Maker.

Washing nozzles are fitted in turbine casing for the purpose of proper washing of turbine side. Hose along with pressure gauge or flow indicator and pressure adjusting knob supplied by the Maker is to be connected to AE T/C.

Commonly recommended turbine side water washings are as follows:

A. Washing with engine idling: In this method engine is run at load less than 10 %. After stabilising the parameters, the washing hose is connected and pressure is adjusted as per Maker guideline. Washing is continued till water is running through the drain of turbine casing. Engine is run for around 10 mins after completion of washing to evaporate all the water and then load is increased gradually.

B. Interval washing: This method is also applicable at reduced load. However, the load on engine is decided by exhaust gas temperature before turbine. One example is given below:

Operating values for interval washing

Exhaust-gas temperature before turbine	Water pressure (above atmospheric)	Washing time
350 – 430 °C	2.5 – 4.5 bar	3-4 x 30 sec

Reduce the load to meet above condition of temperature before turbine and open water at specified pressure for around 30 sec only. Wait for around 3 mins to allow water inside turbine to evaporate. Repeat process for 3-4 times. In this method it is not necessary that the water will come out of drain of turbine casing.

C.10 min procedure: In this method engine is run at around 20 – 40 % load to achieve turbine inlet temperature of around 430 deg C. After temperature stabilisation, water is injected at specified flow or pressure for around 10 mins. After completion of washing the engine is run for 10 mins at same reduced load before increasing the load. This allows remaining water in the system to evaporate.

Washing must be done with exact amount of water as per Maker's instruction. Smaller amount of water than that specified may lead to an inadequate cleaning. However, larger amount of water may lead to inadmissible thermal stress in the turbine component or flooding of turbine.

Most common difficulty faced in water washing of turbine side is that the turbine casing drain and water inlet3 way valve get choked very frequently. Hence, every time before starting of washing of turbine, both must be confirmed to be clear.

After proper water washing, the exhaust temperature may reduce by 30 – 40 deg C and scavenge air pressure increased by 0.1 bar.

2. Mechanical cleaning of Turbine:
Normally if turbine washing is done properly there will not be any need of mechanical cleaning. In adverse operating conditions or if water cleaning has not been carried out for a long time it might be necessary to carry out mechanical cleaning of the turbine components. The interval for mechanical cleaning is generally half of the major overhaul interval. The cleaning effect can also be assessed during mechanical cleaning.

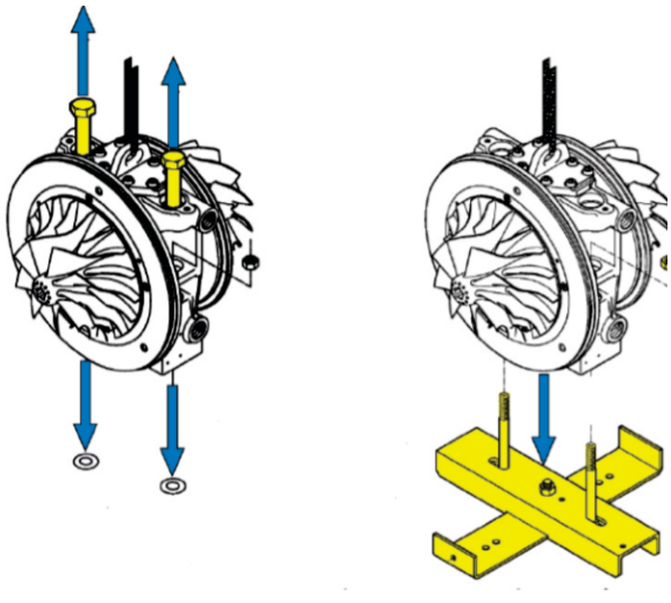
In this method cartridge is removed from turbine casing. Turbine wheel, turbine nozzle ring, turbine casing and compressor wheel is cleaned mechanically. Components are cleaned with alkaline aqueous chemicals or diesel oil.

3. Cleaning of compressor side: Interval 24 to 50 hrs
The degree of fouling of compressor wheel largely depends on ambient conditions since intake air may contain dust, oil vapours or soot. Regular cleaning of compressor is necessary during operation to prevent such deposits being formed on compressor wheel. Please note that cleaning of compressor side in normally performed by injecting water at higher load. For this a small water tank is provided approximately 0.5 litre, which is filled with FW and a compressed air supply at 7 bar results in atomising the water causing cleaning effect. The cleaning is actually performed by kinetic energy of atomised water droplets.

4. Major overhauling:
The major overhaul interval may vary from 12000 to 16000 hrs depending on various Makes and Models. Depending on Maker's recommendation either the T/C cartridge is overhauled by ship's staff or by authorised workshop.

Apart from above maintenance, it is important that duty engineers are alert and keep their senses active to notice any abnormality in sound of running T/C, vibration, surging, etc. Felt filter of T/C should be renewed regularly.

The responsibility of ship staff does not end here. There have been various cases when DG T/C cartridge has got damaged due to improper packing. A Safety Flash has been circulated to all vessels on this account. Below is given one general arrangement for securing and packing a T/C cartridge while landing.



General arrangement of fixing the cartridge on wooden base

Contributed by: Mr. Jitendra Kumar (Engineer Superintendent)

PHYSICAL ACTIVITY RECOMMENDED ON SHIPS

your health

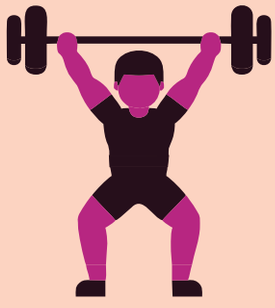
physical activity along with a healthy diet and quality sleep can help the body maintain a healthy immune system. Exercise can relieve stress, depression, anxiety and anger. Which can be associated with being isolated for extended periods.

30 minutes a day

The World Health Organization recommends 150 minutes of moderate-intensity exercise a week. The best approach is to include both cardiovascular and resistance training exercises.

order of operation

When performing resistance training routines, start with the larger muscle groups first, such as chest, back and legs. Then move on to your smaller muscle groups such as biceps, triceps and shoulders. Aim for 2-3 times per week.



be in control

Using a resistance band is a great way to build muscular strength, increase endurance and ward off injuries. Always check your band for structural integrity and perform movements in a slow and controlled motion, exhaling on exertion

Experience any discomfort while exercising, STOP immediately. If you have questions regarding your ability to perform exercise seek medical advise.

ANCHOR AWARENESS

In the current trading environment, the period spent waiting at anchorage outside port limits around the world may increase for some ships. Lost and dragging anchors are the root causes of many groundings and collisions occurring while waiting at anchorages, and ship operators, **Masters and crew need to be aware of the risks involved and thoroughly assess the limitations of a vessels' anchoring equipment.**

The key to ensuring that a vessel is safely anchored, and remains safely anchored, is the leadership and judgement shown by the Master. A significant factor in most anchoring incidents remains the failure of Masters to appreciate at an early stage that a dangerous situation is developing and to take early and decisive action.

Risks and limitations of a ship's anchoring equipment

Most of the P&I claims received by Gard related to anchoring equipment are due to the loss of anchors at designated anchorages where the authorities require the lost items to be found and removed, thereby resulting in a “wreck removal” case. Anchor losses can be due to technical or equipment failures, such as heavily worn brake band linings; corrosion of chain links; spile pins of D-shackles falling out due to not being correctly secured; problems with chain stoppers and tensioning devices, etc.

The more serious and very costly cases occur when a ship drags its anchor in strong currents or bad weather, and where this leads to collisions with other nearby anchored ships, groundings and loss of the ship, pollution or damage to cables and pipelines on the seabed.

A “dragging anchor” means the ship drifts without holding power, even though it has been anchored. It is important to note that it can take some time for the crew to realize the anchor is dragging and the ship drifting. Once realized, it will take time to weigh (lift) the anchor, start the engines and restore the ship to full manoeuvrable condition, a period the ship may run dangerously close to other ships or structures, or into shoal water.

Environmental risk factors, such as weather, strength of the currents and depth of water, play a significant role in the loss and dragging of anchors. The anchoring equipment is not designed to stop a ship from drifting or hold a ship off a fully exposed coast in bad weather. Climate changes and extreme weather events are becoming more frequent and may occur in locations previously known to be benign and safe.

One of the key findings in casualty investigations is the importance of the crew being aware of the environmental loads their anchoring equipment is designed for. If these limits are not considered during shipboard anchoring operations, there can be significant damage to the ship – even beyond the loss of the anchor and the chain.

If a ship is at anchor in ballast condition, the Master should bear in mind that wind forces acting on his ship may be much larger than during loaded condition as a larger ship side area is now exposed. Ships in ballast will also be more vulnerable if they need to move away in bad weather, as both the steering and the propulsion may be affected.

Class societies make it clear (DNVGL-RU-SHIP Pt.3 Ch.11 Sec. 1) that the use of the anchoring equipment is only for the temporary mooring of a ship in moderate sea conditions, within a harbor or a sheltered area, when awaiting berth, undergoing maintenance or receiving bunkering, etc.

Recommendations

Most anchor losses are preventable, if proper maintenance and handling procedures are followed.

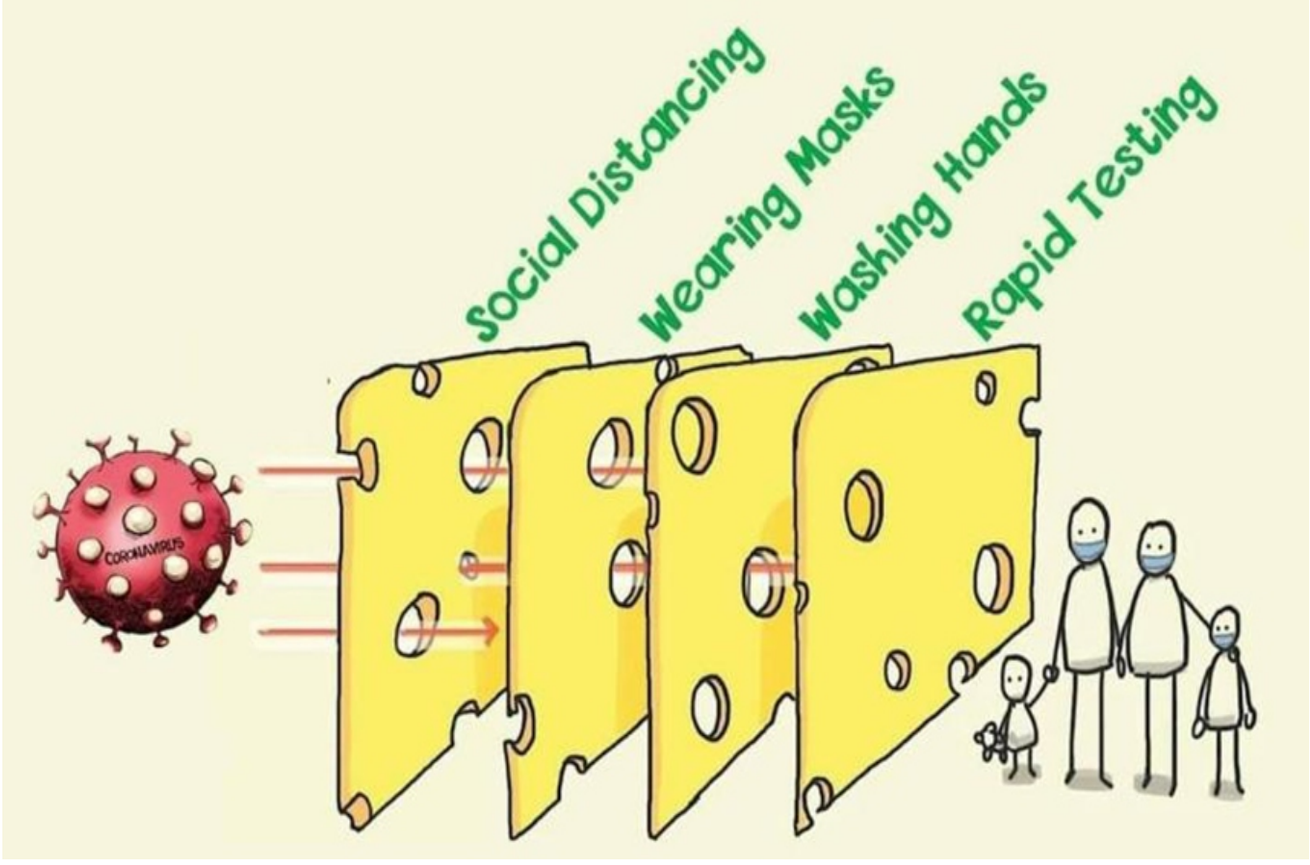
Know when to leave the anchorage - If a ship is anchored in an area exposed to weather, it is necessary to have a policy as to when to leave. There have been cases where Masters have been under commercial pressure not to leave an anchorage, and disasters have followed because the Master was tempted “to wait and see until the morning”, although the weather forecast was bad.

Know the limitations of the anchoring equipment - Masters must be particularly aware when anchoring close to shore in poor weather or in poor holding ground. In making the decision whether to stay or leave, the Master should also be aware of the limitations of his anchoring equipment. Some Masters may not have full knowledge of these limitations; however, they are laid down by the class societies in their rules for calculating the dimensions, weights and strengths of the anchoring equipment. With the mentioned limitations in mind, it can be seen from instances of ships dragging anchors in bad weather that Masters have at times placed too much trust in their ship's anchoring equipment. Today's weather forecasts are usually very reliable and Masters should more often choose to weigh anchors and go out to sea in time if heavy weather is forecast.

Training and mentoring of crew - Anchoring a vessel safely should be an uncomplicated operation. However, it can only be carried out safely with proper planning, a properly instructed bridge team, and when positive on-board management and leadership are shown. Owners and managers should ensure that such knowledge is transferred to junior officers through structured training and by making that knowledge available. Good seamanship and the practice of good seamanship are best learnt on the job whilst at sea. Good anchor watches must be maintained which include the use of navigation equipment in setting up anchor watch alarms. Extra precautions such as additional cable paid out and having engines on immediate notice should also be considered.

Source: GardPNI Club

THE SWISS CHEESE (CORONA VIRUS) MODEL

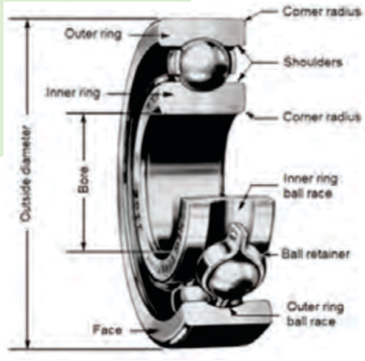


LIFE OF A BALL BEARING

The purpose of a ball bearing is to reduce rotational friction and support radial and axial loads. It achieves this by using at least two races to contain the balls and transmit the loads through the balls. In most applications, one race is stationary and the other is attached to the rotating assembly. As one of the bearing races rotates it causes the balls to rotate as well. As the balls are rolling they have a much lower coefficient of friction than if two flat surfaces were sliding against each other.

Ball bearings tend to have lower load capacity for their size than other kinds of rolling bearings due to the smaller contact area between the balls and races. They are characterised by point contact between the balls and the raceways. As a rule, ball bearings rotate very quickly but cannot support substantial loads. However, they can tolerate some misalignment of the inner and outer races.

Common terminology of ball bearing Components



Types of ball bearings

Various types and designs of ball bearings are available to suit the demand of application.

Deep-Groove Ball Bearings:

The most commonly used bearings are easy to maintain and not as sensitive to operating conditions thus are used in a wide range of applications. In addition to radial forces, they absorb axial forces in both directions. Their low torque also makes them suitable for high speed applications.

Angular Contact Ball Bearings:

They are characterised by a contact angle. Forces are transferred from one raceway to the other at a particular angle. Angular-contact ball bearings are therefore suitable for combined loads, where high axial forces have to be transferred in addition to radial forces.

Self-Aligning Ball Bearings:

These bearings include a double row of balls guided by a cage and double row inner ring raceway but have the special feature of a continuous spherical outer ring raceway allowing the inner ring / ball complement to swivel within the outer ring. This is what enables a degree of self-alignment in the application.

Thrust Ball Bearings:

Consists of two bearing discs with raceways for the balls. Thrust ball bearings were developed solely for absorbing axial forces in one direction, meaning they can locate the shaft axially in one direction.

Important tips for proper bearing maintenance

It is important ball bearings are maintained properly to ensure long operational life. Bearings play a significant role in the free and unrestricted movement of mechanical components. Here are five tips for bearing maintenance to help ensure a longer lifespan:

1. Handle with care

It is very important that they are stored in a clean and dry environment with their packaging intact. Never hammer or pound them or apply a direct force on it or its outer ring, which can cause damage to the rolling elements, resulting in misalignment. The most important thing to remember is to never remove bearings from their packaging until ready for use.

2. Check the bearing housing and shaft

Whenever a bearing is used for mounting, it is crucial that the housing and shaft are inspected. Always use a soft cloth to wipe the surfaces clean and make sure any nicks and burrs on either surfaces are removed. Ensure that outer race of ball bearing is not loose & does not rotate in its housing e.g. in electrical motor end covers. These covers to be repaired to make outer race of bearing to fit tight and not rotate in operation.

3. Mount the bearings correctly

When mounting a bearing, never strike it directly with any hard object, such as a steel hammer or a chisel, and never apply the mounting force through the rolling elements. Premature bearing failures are caused by poor fitting. Small bearings can be mounted by cold technique without any heating. In cold mounting, the misguided practice of using a standard hammer and pipe for the job has long been discredited. This practice can cause debris to enter the bearing or, if not done properly, a pipe can slip and impact the internals of the bearing. Specialized tools like bearing pullers, bearing fitting tool kits, oil injector kits, hydraulic nuts, or induction heaters should be used in the mounting and dismounting processes. These tools ensure the smooth process of mounting or dismounting, in order to minimize the risk of damage. Methods involving heat mounting will be appropriate for relatively larger bearings. Hot mounting, where the bearing is pre-heated, provides a practical solution to allow for a bearing's expansion and subsequently easier installation, while maintaining specified interference fit after the job is completed. Even heating like in hot oil bath, induction heater and an oven should be used to prevent any damage during the heating process. Never use an open flame to heat the bearing as this can cause permanent deformation and lower the load bearing capacity.

4. Proper lubrication

For a prolonged life of bearings, it is crucial that they should be properly lubricated. The correct lubricant depends on the environmental conditions, temperature, speed and load. In this case, it is advisable that you should follow your manufacturer's recommendations for type of lubricant, amount of lubricant and interval of lubrication. Over and lack of lubrication can result in overheating and premature failures of bearings. While re-lubricating, please ensure that old grease or lubricant is replaced with fresh lubricant.

5. Renewal of bearing before its' life time

Failure of ball bearings cause expensive damages to components of machineries. Cost of repairs can be quite high as compared to low cost of ball bearings. Predictive and preventive maintenance can help us to avoid these damages and reduce operating cost and man hours spent to restore the machinery after breakdown. Vibration analysis tools & measuring equipment are used as a part of predictive maintenance to find early failure of bearings. Ball bearings require regular pre-lubrication and renewal upon completion of basic life hours. As a part of preventive measure bearings should be renewed before it reaches basic life hours depending on running hours and rotational speed.

Type of machine	Basic Life Operating Hours
1. Machines used for short periods intermittently. (Examples: Steering gear grease pump motor, engine room crane motor)	4000 to 8000 Hours
2. Machines not continuously running in a day. (Examples: Hydrophore pump motor, valve remote control pump motor)	12000 to 20000 Hours
3. Machines continuously in use for 24 hours in a day. (Examples: AHU fan motor, Main Seawater pump motor)	20000 to 30000 Hours

Contributed by : Mr. Atul Singh Rana (Chief Engineer DHT Bauhinia)

REGULATORY UPDATES

No	Regulation	Ship Type/Due Date	Outline of Requirement
1	MARPOL I MARPOL II MARPOL V MEPC 314(74)	All ships 01/10/2020	MARPOL Annex's, I, II and V have been amended to permit the use of approved Electronic Record Books, in lieu of hard copies, for the purpose of recording discharges, transfers or other operations as required by each respective Annex and resolution MEPC 312(74)
2	MARPOL II IBC Code MEPC 318(74)	Chemical ships >500GT and keel laid after 1/7/1986	**H2S Detection, Prewash Requirements** Amendments to the IBC Code require hydrogen sulphide detection equipment onboard when carrying certain cargoes, and also requires specific operational measures related to tank washings of persistent floating products (by reference to regulation 13.7.1.4 of MARPOL Annex II, resolution MEPC.315 (74)). Complete revision of Chapters 17, 18 and 19 made.
3	MARPOL II/13 MEPC.315(74)	Cargo ships 01/01/2021	**Cargo residues and tank washings of persistent floating products** The discharge of tank washings from tanks carrying products defined as “persistent floaters” is regulated by amendments to MARPOL II. The amendments apply to specific geographic areas and will require a prewash procedure which discharges the tank washings to a reception facility at the port of unloading.
4	SOLAS IX MSC.428(98)	All ships ≥500gt 01/01/2021	**SOLAS IX – Cyber Security** Recommendations on the implementation of cyber risk management take into account that safe operational practices in ship operation should identify risks and establish appropriate safeguards to ship, personnel and the environment under the ISM.
5	ESP Code MSC.461(101)	Bulk carriers & Oil tankers 01/01/2021	**Amendments to the 2011 Enhanced Survey Programme Code for bulk carriers and oil tankers** Extensive changes have been made to the text: a) to ensure the text used is mandatory, b) to update the figures, c) to introduce consistency between the different parts of the Code, d) to clarify requirements concerning updates to the Ship Construction File, e) to include new sections on the number and locations of thickness measurements for ships constructed to IACS CSR, f) to include new sections on the acceptance criteria for corrosion

Goodwood Ship Management Pte Ltd

20 Science Park Road
#02-34/36 Teletech Park
Singapore 117674

Ph +65 6500 4040
Fax +65 6500 4050

Goodwood Marine Services Pvt Ltd
(Manning office in India)

Unit 905, 9th Floor
and Unit 1222, 12th Floor
Hubtown Solaris
N. S. Phadke Marg,
Andheri (East),
Mumbai - 400069
Maharashtra, India

Ph +91 22 6720 0400
Fax +91 22 6720 0404

application@goodwoodship.com

www.goodwoodship.com

Goodwood