

Date: 8/18/15

To: Sean Holmes/Richard Pusatere

From: James Robinson

Subject: Chief Engineers Relief Notes

**Welcome back Rich. Its been a quick week on here so I will just add to Jims notes in bold text.**

**We took on 4250 bbls RMK-500 yesterday afternoon and landed the 4 drum of XT that was meant for the Yunque. Our order has not been approved yet.**

Port Lifeboat: We will be landing a hydraulic hose from the Port Lifeboat starting system with Pete in Jax so he can take and have a set made up. The one hose will need to be reinstalled before sailing then when time permits the old hoses can be replaced. The old hoses are starting to blister. **Keith replaced the hoses and it's all set.** The Coast Guard is supposed to be inspecting the lifeboat davits, I am not sure when they will be onboard. There are 2 extra life rafts onboard just in case they find issues with ours we will still be able to sail. Shad Harding did the lifeboat inspections last week. The over running clutch is making a noise on the stbd winch and the seal is leaking on both boats. The over running clutches are in the report to be replaced as soon as parts are available. We have 2-Over Running Clutches onboard but are a different style, the tech is checking to see if these can be used. **One of them is on the counter in CE office.**

Stores Crane: There is a new pulley on order for the stores crane. The old one is the wrong one and has a gap between the sheave and plates where the cable can get jammed and parted if they are not paying attention when operating. When the new pulley arrives the top swivel block will need to be removed and drilled out to fit the 1" pin that mounts the new pulley. The old pulley has a 7/8" pin. There is a 30 day order period for the new pulley. I have spoke with the Port Engineer on getting a hydraulics outfit to visit the ship and make new hydraulic hoses for the stores crane. You can see the metal jacket showing where the hose has been rubbing and weather cracking. I have not followed up on this so if you get a chance to these hoses need to be replaced. **No new information on this.**

Reefer Cargo: We have been hauling 250 plus reefers Southbound. There is a power pack which is placed on Bay #3 for additional reefers. The power pack has been running without any issues since I have been back, there are extra F/O filters in the electricians shop. It has been a little screwed up when they put the power pack onboard, last couple weeks it has been after there afternoon break. Since I have been here I have been hooking up the fuel lines from the ISO Tank which is located beside the genset and starting the unit. After the unit is placed onboard shore side personnel are supposed to come set it up and start. If you don't start the unit let the mate know to have shore side personnel there to hook it up when it comes onboard. I have been helping out on the second deck when I am not involved with other things on the ship. At the end of cargo when the paper work comes onboard I get together with the electrician and go thru the refer manifest. **The day I came on the standby electrician and the reefer**

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electrician started the unit with only the fuel supply line hooked up and not the return line. Jim told them both not start it or mess with it and that he would be down to get it going. But they did anyways and then it wouldn't stop with the e-stops all pushed. We had to shut off the fuel supply to get it to stop and bleed the pressure off the return line in order to hook the hose up. It has been running fine this trip otherwise.

Boiler Surveys: They are planning on surveying each boiler for the shipyard over the next couple weeks. Luke from Walashek will join the vessel this week in San Juan 8/14/15 and also 8/28/15. The plan would be to secure whichever boiler you choose after finished with engines and depart San Juan on one boiler. After securing open up the vestibule, super heater cavity, pull an air register, and whatever else the Tech wants to complete his survey. When the survey is complete fire the boiler and put it back online to arrive Jax with both boilers on. **Luke cancelled the 8/14 trip and now arrive 8/28 to do the first boiler inspection and return at a later date to inspect the other boiler. There is a small leak on the feed water line on the boiler side of the feed stops, stbd boiler. We have discussed changing out the gasket when the boiler comes off line on the 28<sup>th</sup>.**

Conversion Work for Alaska: As you know Jeff Matthias is riding the vessel with a couple JMR workers putting things back together. They will be riding till work is complete. **JMR is off the vessel as they completed their pipe run for the ramp de-icing system. Jeff has a gang of polish welders riding now to help him out.**

Winches: The electrician takes care of the oil levels in the winches weekly. We replaced the Torque Converter on the fwd stbd anchor winch the first week I came back. The winch has been running without any issues and not using any ATF (Hydraulic Oil). The aft inshore winch needs to have the torque converter changed out. We are adding 6 quarts of ATF to the winch each week which is going to the gear oil side. I talked to the Port Engineer and there are 2 units getting reconditioned from the West Coast and one unit over here. There should be a torque converter available within a few weeks and will need to schedule a date to replace the converter on the aft Inshore winch. The gear oils will need to be changed out in the winches for the West Coast Alaska run. They are supposed to be getting the Arctic Gear Oil that is needed put onboard, when it arrives the oil can be changed as time permits.

Cargo Hold Fans: The week I returned the #5 hold stbd fan failed so we pulled it and landed ashore to be repaired. The fan is still not onboard but when it returns it will need to be installed. There is an order in Amos for new mounting hardware for the fan and that also has not arrived yet. The electrician has been looking into the motor heaters on the cargo hold fans and also inside each of the controllers. There is a list on the c/e desktop with which motors have heaters and which do not. These need to be working for the West Coast run.

Watertight Doors: The 12x4 third does an oil round each week on the doors. Last week when they were washing down the second deck from having cows onboard watertight door #2 lower knife edge is hold and leaking. I have not had a chance to repair but it is on the shipyard list to repair. We still have 2 watertight door closing rams ashore being repaired not sure when they will be back, as of know we only have the big rams onboard for spares which door #1/#2 use. I put on the shipyard list to pull #9 WT door

ram, repair the clevis/ram threads so the clevis will screw all the way on the ram and the door will open completely.

Fructose Pumps: I inspected the couplings when I first got back and they were still in good condition. There is not any work orders in Amos for this system due to we do not have access to making any changes in the system. When time permits have the electrician change the oil in the Fructose Pumps, grease the pumps, and inspect the couplings.

Cargo Elevator: The electrician does a weekly slushing on the elevators sliding parts and general cleaning of the pit area. Monthly he greases the elevator and filters the oil in the system.

Ramp Winches: The electrician does the monthly oil checks and scheduled oil changes. When the Arctic Gear Oil Comes onboard the oil will need to be changed in the aft ramp winches.

Emergency Generator: The last 2 hour load test was completed the end of July and everything worked smoothly. The service was completed on the EDG this week, oil/oil filters were changed, and fuel filters. Generator was ran, secured, and placed back in Auto. On the inboard side water jacket the rubber seal joining the two manifolds drips when the engine is warming up. I have a Req out for gaskets and the seals to replace. I looked up the parts on line [powerlinecomponents.com](http://powerlinecomponents.com) to get the part number, so hopefully they are the correct ones.

Ship's Reefers: We serviced the Inbd/Outbd reefer compressors. Changed the filter drier cores and changed the oil. (Used Zerol 200 TD Reefer Oil)

AC Plant: The port/stbd ac units were serviced, both the filter dryer cores were replaced and the oil was changed.(Used Zerol 200 TD Reefer Oil)

#4 Double Bottoms: The reserve feed tanks are full and ready for use. Jeff has been using a Wilden Pump taking suction from the double bottoms and testing the ramp deicing piping.

Hydro Pump: We have used the hydro pump several times this trip and haven't had any problems. When time permits the suction side needs to be rebuilt the seals are leaking. There is a seal kit in the parts box to replace/rebuild.

Oily Water Separator: Two weeks ago when running the OWS the unit went into recirc mode not allowing the water to pass thru the filters. There is a temperature sensor in the aeration tank which initiates the recirc mode if the inlet water is not 50 deg C. I disconnected the brown wire to the sensor from terminal #12 inside the control cabinet. We do not use the chemicals for processing our bilge water so the sensor doesn't affect the operation. I ordered a spare temperature sensor and it will need to be installed when it arrives. The White Wire goes to terminal #11 and the Brown Wire goes to terminal #12. The electrician was with me when I disconnected and I showed the 1 a/e what needs to be done when the sensor arrives. I cleaned all 3 strainers, hot water back flushed the filter chambers, drained/flushed floc tank, drained oil tank, pulled/inspected zincs, and re-filled each tank with fresh water 8/9/15. The unit is ready for use. The spare tags for the OWS Overboard Valve are in the engine room office.

Vacuum Pumps: Other than routine monthly maintenance haven't had any issues.

Evaporator: The 8x12 has been acid cleaning the evap each week. I put on the shipyard list to pull the tube bundle in the shipyard and weld up any fractures in the shell. The evap has been making good water.

HP Turbine: The HP Turbine FWD Journal Bearing is still running around 168 deg on the South bound voyage. This bearing has been like this since I have been on this ship, it is on the shipyard list to open and inspect.

Reduction Gears: On the vibration analysis report there was a questionable reading on the fwd high speed gear bearing on the intermediate shaft. I sent the report to Dan McDonnell and he recommended just opening up the gear cover and inspecting the teeth. I have put on the shipyard list for the gears to be inspected. In the turnover I will show you his report.

GST-100 Turbine Oil: We received 1000 gal of GST-100 this tour and it is in the settler tank. The L/O reports show the oil is a match with the oil already in use. This oil is all clear to be used if needed. The l/o reports are with the receipt in the c/e desk drawer receipt file.

Ships Generators: With the big load of reefers being loaded on the South bound trip we are running the generators in parallel for the trip south. While maneuvering we have both SSTG's running but with only one on the bus. When the load increases in Jax the 1 a/e parallels them for the voyage South. At the log desk the bulkhead steam stop for the SSTG's there is a steam drain line after the stop which has a pin hole in the pipe. I have put this on the shipyard list to be repaired. We haven't had time for a plant shutdown to make the repair.

Salt Water Service System: We haven't had any issues with either pump this tour. The 5" globe valve below the deck places for the crossover from the fire main has a pin hole in the bottom of the valve. There is a spare valve in the port loft to replace in the shipyard. The 5" discharge flange on the Outbd Pump is also on the shipyard list to address. It is not leaking but the hardware/gasket needs to be replaced.

Bilge and Ballast System: The ballast system has been operating without any issues.

#1BStbd Ballast Tank: We had an issue with the tank valve not opening up all the way and the reach rod just free turning. The tank was pumped down with the valve partially opened. The tank would not pump all the way out and we found a hole in the 6" ballast piping on the lower level of the tank, approx. 10' from the bottom of the tank. We put a rubber patch on the hole so we could pump the rest of the water out to get to the tank valve. We found the reach rod mounting u-bolt failed on the bracket. We replaced and haven't had any further problems. I put on the shipyard list to replace holed section of ballast piping in the tank and to replace any wasted angle iron brackets on the reach rod.

Tank Level Indicators: I put on the shipyard list to replace the wasted sensing lines on the following tanks, 1BStbd, 1AC, and the Port and Stbd Ramp Tanks. The piping is holed inside the tanks so the Levelcoms will not read the levels in the tanks.

Sprinkler Pump: Other than routine monthly testing/maintenance we haven't had any issues.

Main Circulator Pumps: We haven't had any issues with the pumps this tour. The discharge butterfly valves will need to be repacked in the ship yard.

Main Condenser: We opened, cleaned, and inspected the main condenser 7/31/15. The Swedish steel plates were in good order till shipyard.

Main Condensate Pumps: We were having issues with the Port Pump maintaining a level in the hot well at full speed. We replaced the Outbd Condensate Pump with a reconditioned spare from the ware house; this pump had been in service for 6 years without an overhaul. We replaced the outlet stop check valve that failed, and also the suction expansion joint failed. We haven't had any problems since. The pump was sent to Jax Machine to be overhauled/returned to install on the Stbd Pump which is overdue to be overhauled and showed bad readings on the vibration analysis report.

Emergency Condensate Pump: We had to swing the plant to replace the expansion joint on the Port Main Condensate pump and the Leslie valve on the recirc line wouldn't regulate. We pulled the diaphragm and it was holed and full of rust. Cleaned it up and installed a new diaphragm.

Emergency Condenser: We were on the emergency plant when we cleaned the main condenser and we did not have any issues. When time permits the condenser should be drained and filled with fresh water/bleach. Pete is supposed to be bringing onboard what expansion joints he has in the ware house to replace the outdated ones on the emergency plant. The emergency condensate pump suction expansion joint is onboard and can be installed when time permits.

Lube Oil System: The Aft Lube Oil Pump Discharge pressure is a few pounds lower than the fwd pump. When on the aft pump after the oil warms up the pressure drops a couple pounds causing the standby pump to start. We adjusted the pressure switch on the back of the console down 5 pounds because it was to close and the standby pump would keep starting. We are running 51/52 psi pump pressure and 9.1/9.2 at the bearings while on the aft pump. On the fwd pump the outlet pressure 54/55 psi and 9.3/9.4 at the bearings. I put on the shipyard list to either rebuild the pump or replace with the reconditioned one in the ware house. The fwd l/o pump is also on the shipyard list to replace the mechanical seal.

Fuel Oil System: Other than routine monthly maintenance we haven't had any issues. The spare IMO F/O pump that you received did not have the flange bolt holes drilled and tapped in the pump for the spool pieces. I landed with Jax Machine and they drilled/tapped the holes for the suction/discharge spool pieces to bolt up to. The pump is mounted on the bulkhead in the lower engine room.

Contaminated System: I contacted MTH Pumps and they gave me Power and Pumps Jacksonville phone number to contact for rebuild parts. I ordered a seal rebuild kit for the lower pump which had the leaking seal. I reordered the MTH Pump thru Power and pumps and received it and it's in the lower store room. There is another seal rebuild kit for the pump on the lower shop when time permits to

rebuild. We replaced both suction gate valves when we rebuilt the lower pump because neither would hold.

F/O Treatment: There is a requisition out for fuel treatment. We have enough for a few more weeks onboard. Amounts will be in the turnover log.

Quincy Air Compressors: The 1 a/e rebuilt all the suction/discharge valves on the Inbd compressor. This compressor seems to be getting time to replace with a spare from the ware house. This unit doesn't build up pressure as good as the outbd and either needs to be rebuilt or replaced. There are rebuilt compressors ready to go in the warehouse; I am putting on the yard list to replace both.

Atlas Copco Control Air Compressor: We had an issue with the unloader valve not working so the compressor failed to load. We pulled the valve apart and cleaned. The compressor has been operating without any issues since.

Coffin Feed Pumps: We had the Outbd feed pump Baldwin spin on lube oil filter fail. The filter cracked across the bottom, changed over pumps to replace spin on then put pump back online. This is the third spin on lube oil filter I have seen fail on these feed pumps, just something to keep an eye on. We have not received the steam chest that you landed to be reconditioned, it was sent out to Lee Engineering. The 3"-900 lb gasket was leaking at the tee which branches off to the Outbd feed pump. We slugged up on the flange and it hasn't been leaking since. There are 3-3"-900 lb gasket off the main steam line before the feed pump stop valves that need to be replaced in the shipyard.

Sewage Treatment Plant: Other than routine maintenance been operating without any issues.

Boilers: The port boiler was opened and cleaned 7/11. The front wall brickwork is failing even more and will be addressed in the shipyard. The stbd boiler was opened and cleaned 7/25. The front wall brickwork is starting to fail and also causing the water wall tubes to bow out. Luke from Walashek will be riding the ship North bound 8/14 and 8/28 to survey both boilers for the shipyard. On the desktop I started a shipyard work list and also told the second to start making a list of anything he finds that needs to be addressed. We have been running max speed Southbound and both boiler super heater control valves have been running approx 45%. Last week the Stbd boiler feed water regulator started hunting at sea. We slowed down and manually controlled the water to pull the diaphragm for inspection. The diaphragm was not in bad shape but we found the seal around the plunger for the manual hand crank was bad. We did not have a spare seal so we installed a new diaphragm and put back online. We will be receiving a seal from the EL Yunque in Jax and will install. I placed an order for the Copper graphoil gaskets for the burner registers but they shipped the standard blue guard gaskets from B&W. I kept the order because we only have one copper gasket left. I did not get a chance to re-submit a req requesting the copper gaskets , there is a tag in front of the computer from Leader Gasket that these gaskets last came from. If you get time put in a req again and see if we can get the correct ones.

Forced Draft Fans: The stbd forced draft fan had elevated readings on the vibration analysis report. They suggested splitting the bearings for inspection and check the alignment. We have not had a chance to split the bearings and will need to be done when time permits. The air filters arrived for the fan drives

but we have not installed them yet. The port fan filter bowl starting blowing the other night so I took one of the bowls off the new unit to install. The air filters are in the engine room office.

Strut System: The L/O Analysis report has been coming back with high tin readings. I have been flushing the system out by draining 10 to 15 gallons off every couple weeks. The port engineer has been requesting samples so expect this will keep happening to determine if the bearing will be pulled in the shipyard.

Steering Gear: Other than routine maintenance and filtering the oil we haven't had any issues this tour.

I am sure I have missed some things but if you have any questions give me a call.

James Robinson, C/E EL FARO