Ocean Networks Canada

Ferry Maintenance Report – Queen of Alberni

Vessel: Queen of Alberni

Date: May 1st, 2017

Arrival: 09:50 at Tsawwessen, berth 2

Reporter: Ian Beliveau

Staff: Ian Beliveau

Reason for Visit

Supervise a diver inspection of the external pod, and to repair or replace as necessary. Ship docked at berth 2 at Tsawwassen.

Summary, Dive Operations and Preparation

The divers from All-Sea arrived at around 10:45 and began setup. These included Lance Hiney (supervisor), Eric (diver), and Connor (deck ops). Alberni Engineer James acted as the BCFC dive coordinator. The All-Sea ops truck and trailer were positioned at end # 2 near the ramp. A ladder was installed near the ramp so the diver could get in the water. The dive team completed necessary paperwork with ship's crew and lockout procedures by about 12:00 to 12:15. They were given a briefing of the pod location and the tasks that were to be done.

For ONC preparation purposes: The ship's crew needs to be consulted on the best day to work around their refit schedule. Lack of staff, occurrence of sea trials, or other work on board may dictate when and where a dive takes place. The crew needs to have a small boat and staff available for rescue operations. The Chief Engineer may also approach ONC to utilize some dive time to inspect the hull. Giving the OK to do this is mainly a goodwill gesture given that there are not many convenient times for the crew to execute dives during daytime hours.

Observations and Actions

- The pod was attached to the hull, and looked to be in good condition. Only some slight damage had been done to the stainless gratings.
- There is no sign of significant fouling
- The pod is in the correct orientation
- There are no cracks or significant abrasions on the pod
- The ball bearing moves freely
- There are no significant gaps between the hull and the pod
- An attempt was made to remove the pod so it could be brought to the surface for closer inspection and have a rubber based sealant added to the bottom.
- The diver made several attempts to remove it, but this proved difficult. The diver became concerned that damage would be done to the pod if more brutish removal attempts were made.

- The decision was made to leave the pod on. 316 stainless flat washers were added under the stainless lock washers and ½-13 nuts that fasten the pod to the studs.
- A look at the outlet of the system showed that it is clear of fouling. Some chips in the hull paint are present at the outlet.

Background and Conclusions

In August 2016 bubbles were first observed in the Alberni plumbing system. The concern is that this may be skewing oxygen data. A number of ideas why the bubbles are happening have been put forward. One idea is that the pod (lack of pod or mounted badly) has had something to do with this. The Alberni pod has had several servicing periods over the last couple of years, as outlined below.

In May 2015 a diver inspection of the Alberni pod was done (report 2015-05-06). The diver discovered a hull mounting stud missing, so the pod was removed for cleaning, and a copper pipe rammed up in the pod's hull interface hole to keep it from twisting. This was done because there were no spare threaded studs to weld in place of the missing one. The pod was put back in place with one stud and the copper pipe to help keep it in place.

Another dive was made in November of 2015 to repair the stud (report 2015-11-12). The pod was cleaned and a new mild steel stud welded back on the hull. The pod was put back in place.

Last August (report 2016-08-16) it was noticed on a servicing trip that there were bubbles being sucked into the system. These were seen mainly in the BBFL2 tubing and the TSG. No mention was made whether these were present in the main inlet line. Later it was noted (report 2016-09-29) that bubbles would cease when the ship was going slow (or stopped) but the pump was still running.

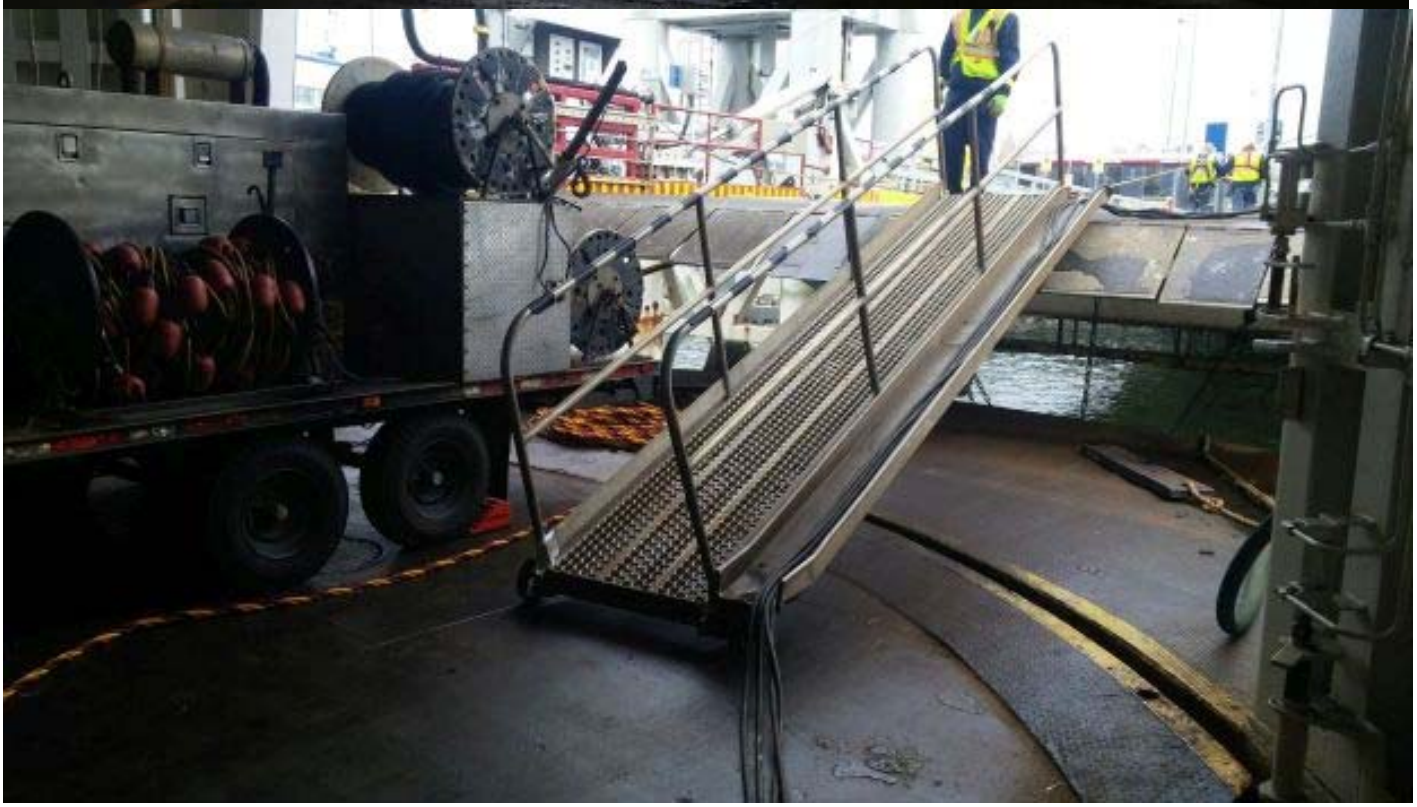
The ship then entered its major refit period in December 2016. When the ship was in dry dock it was noted that the pod was no longer on the hull. The company doing the maintenance (EDC) claims they did not remove it. New 316 stainless steel studs were welded on the hull, and a coat of antifouling epoxy paint was applied to the entire hull. As for the pod, a copper pipe was added to the pod hull interface hole to discourage marine growth in this area (interference fit into pod, black tape isolating from hull protrusion). A brand new pod was fastened onto the hull. Marine silicone was applied in liberal amounts around the hull interface hole to account for the slightly raised inlet on the UVic seachest.

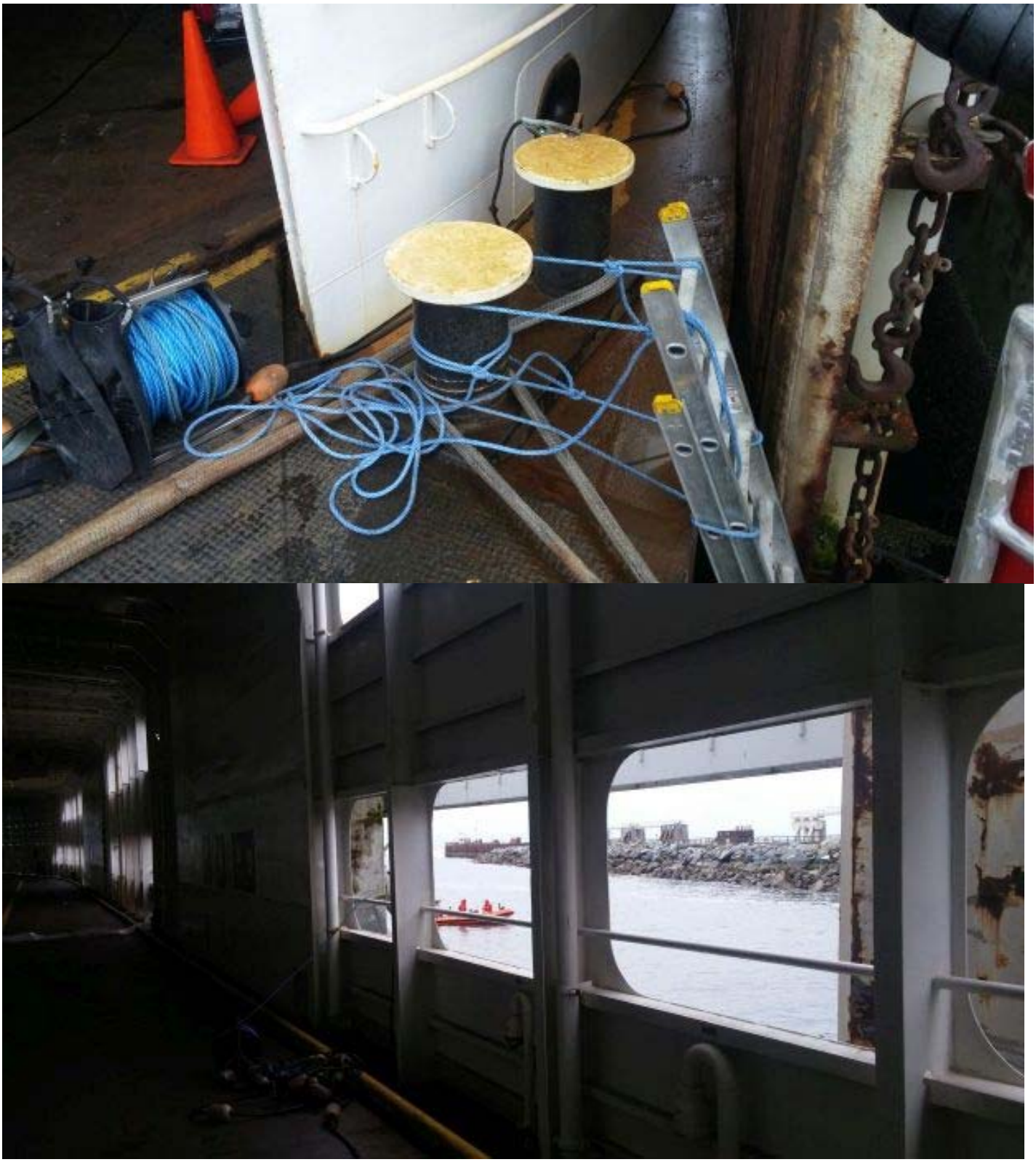
When the ship emerged from refit and sampling begun, bubbles were noted again. It was during one of these trips (report 2017-02-15) that the seakeeper seachest was removed and bubbles were observed coming in the gate valve when the ship was moving. It had also been observed that the bubbles were more numerous on the trip from Nanaimo to Tsawwassen, and reduced on the way back. The bubbles cease when the ship is slow/stopped and the pump is running.

The May 1st pod inspection has not yielded any obvious issues with the pod. The orientation is correct, and the hull/pod coupling is good. It may be good to conduct a more in depth review of oxygen data and correlate the data with pod servicing dates.

Pictures

Below: setup of diver station near ramp





Top: diver ladder, Bottom: safety boat