***Cruise Report (01/09/2015 – 23/09/2015)***

***AX080915 – Maersk Vilnius***

***Technical rider: Chris Jacobs***

On 1 September 2015, the Maersk Vilnius departed Cape Town and arrived at Newark on 23 September 2015. During the voyage, expendable bathythermographs (XBTs) and eight ARGO floats were deployed (details given in Table 1). Going at an average speed of 13-14 knots, XBTs were deployed every 62mins so as to provide a drop every 25 km. This provides a high density, high resolution section of the AX08. Some minor glitches were experienced and are provided in detail below.

***ARGO Float deployments***

*Table 1: Table summarizing the details of the ARGO float deployments*

|  |  |  |  |
| --- | --- | --- | --- |
| ***Serial Number*** | ***Date Started (time GMT)*** | ***Date Deployed (time GMT)*** | ***Deployment position*** |
| *7317* | *25 August 2015 (15h30)* | *05/09/2015 (04h50)* | *22°02.59 S ; 002°43.12 E* |
| *7300* | *25 August 2015 (15h30)* | *06/09/2015 (13h01)* | *17°00.16 S ; 002°46.33 W* |
| *7311* | *25 August 2015 (15h30)* | *07/09/2015 (01h07)* | *15°00.73 S ; 004°37.21 W* |
| *7313* | *25 August 2015 (15h30)* | *07/09/2015 (07h46)* | *14°00.01 S ; 005°46.84 W* |
| *7312* | *25 August 2015 (15h30)* | *07/09/2015 (13h30)* | *13°00.61 S ; 006°41.17 W* |
| *7315* | *25 August 2015 (15h30)* | *08/09/2015 (22h00)* | *07°56.12 S ; 011°47.48 W* |
| *7314* | *25 August 2015 (15h30)* | *11/09/2015 (00h46)* | *00°00.23 S ; 020°01.48 W* |
| *7289* | *25 August 2015 (15h30)* | *14/09/2015 (08h46)* | *11°59.85 N ; 031°38.009 W* |

The conditions for many of the deployments was ideal with small swells, light winds and clear or overcast conditions, however the deployment of float 7289, there were 4-5m swells with storm conditions. Despite the conditions, the deployment was successful.

All the floats were deployed from the aft of the ship with the float being lowered by rope till it makes contact with the water and the salt collar dissolves. This method proved successful for all the floats and was made easy with the assistance of the AB. The floats were deployed while the ship was underway travelling at approximately 13-14 knots. Very little issues were experienced during the deployments.

***XBT Deployments***

Going at an average speed of 13-14 knots, XBTs were deployed every 62mins so as to provide a drop every 25 km. This provided a high density, high resolution section of the AX08. A few problems were encountered during the voyage which had to do more with hardware malfunction rather than software.

After about three days after leaving Cape Town, it was identified that Tube 1 of AutoLauncher, ALR06 began malfunctioning by spiking once the deployment begins and then only beings taking correct readings after approximately 50 – 100m. As a result, Tube 1 was removed from the sequence and so the remaining 7 tubes were used.

One week before the end of the cruise, the same problem arose however this time occurring in Tube 6, however the problem was intermittent and so occasional drops would be good however some drops would spike in the upper 50 – 100m and then correct data would be collected. Because this problem was intermittent, Tube 6 wasn’t removed immediately from the cycle and was continued to be used however avoiding use whenever possible, Tube 6 was eventually removed from the cycle and so a 6 tube cycle was used for the last 4 days of the cruise.

Because of this issue, it is recommended that AutoLauncher ARL06 be removed from the vessel and be taken away for maintenance and for the issue to be resolved. A note was also left with the hardware explaining the issues encountered.

Regardless of this, many of the deployments were successful. Odd profiles were observed on 18/09/2015 due to the vessel passing through several lightning storms. This continued for most of the day however not all of the profiles were affected.

***General***

The Maersk Vilnius is an ideal vessel for all types of deployments with the captain and crew being more than willing to assist with the deployments even during the early hours of the morning. A huge thank you to the Captain Mario, Second officer Rahul Bhati, and crew of the Maersk Vilnius, especially AB Wrehn, for all the effort and assistance, with the deployments and reloading during the early hours of the morning, and for the great hospitality aboard the cruise.