Post Cruise Assessment Report Information

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Cruise Information

Ship: Oceanus **Area of Operations:** NP09

Cruise Dates: 1/22/2016 - 1/26/2016 **Chief Scientist:** Miguel A. Goni, OSU-CEOAS

Cruise Number: OC1601A

PIs and Funding Agencies:

PI: Miguel A. Goni, OSU-CEOAS **Funding Agency:** NSF/OCE/CO

Type of Work: Winter Carbon Cycle **Grant #:** 1459480

Ship Personnel

Master: Jeff Crews **Marine Technician:** Croy Carlin

Completer's Information:

Person's Name: Miguel Goni **Position on this cruise:** PI/Chief Scientist

Institution: Oregon State University

Assessment:

1. To what extent were the planned science objectives of this cruise met?

rating: 71%-80%

comment:

Objectives included survey transects along the shelf with the surface underway system and hydrographic surveys of whole water column across three shelf transects. Each transect included several (5-10) stations. At each station, conducted a full CTD profile with water sampling, then deploy a Vertical Microstructure Profiler (VMP) (using hand-held winch) and a Hyperspectra profiler using A-frame. At specific locations determined from hydrographic data, we will deploy net tows via the A-frame & hand held net tows.

Weather conditions forced a couple of delays in the start of the cruise, but with the help and advice of Captain and crew, we were able to complete the 5 days of science Jan 22-26, 2016. Unfortunately, on the second day of the cruise (Jan 23, 2016) we lost one of the instruments - the VMP - during deployment explaining the reason why we only achieved ~75% of our objectives. Below is a brief description of the incident as communicated via email to shore (Stewart Lamerdin, Marine Superintendent).

"We lost the vertical microstructure package this evening at 20:10 hours during a deployment off Coos Bay along the CB line - CB-5 at 100 m water depth. The loss occurred by the line parting, breaking the rod and partially damaging the reel in the process. It seems to us as if the instrument got entangled on a submerged object. We don't think it was due to operator error. Steve, Brandon (Martech) and Gene (AB) were deploying it off the stern of the ship in the same fashion as in during the last two days. The line was vertical and off the ship. The parting occurred at about 35 m water depth, well below the hull; so we don't think the ship played any part on it either. It happened very suddenly and line, rod and reel all broke at the same time. No one was hurt during the incident and we resumed normal operations afterwards"

Once on port, Stewart had a diver examine the Oceanus propeller and nozzle - this is a summary of those findings:

"Diver found and cut out a fair amount of line (likely from crab gear), a small piece of white spectra line from your profiler was also recovered. The fact that there was a small amount of this line (less than 2 meters) mixed in with the crab gear line should still not be an indication that your instrument was fouled on the propeller. I believe all the people involved in the deployment of the instrument indicated that all line was well away from the vessel and trailing directly down. One possible scenario was that the instrument could have been fouled on the crab gear and the crab gear was in turn, tangled in the propeller. At this point, causes of the loss are truly speculative."

We do have two more cruises scheduled in the next two months (next one in two weeks!) and are working on finding a replacement VMP and re-evaluating the deployment approach for this instrument by deploying it directly off the stern rather off the port side corner of the stern. Any help UNOLS and NSF can provide us with replacement funds would be greatly appreciated.

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2. Rate how well the science party contributed to achieving the scientific objectives of this cruise (pre-cruise planning, communication, adequate personnel, equipment, attention to safety, organization, etc.).

rating: Excellent

comment:

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3. Rate how well ship operator pre-cruise activities (planning, coordination, and logistics) and shore support contributed to achieving the scientific objectives of this cruise.

rating: Excellent

comment:

Captain and crew were outstanding in facilitating science party needs and especially in providing the flexibility needed due to weather conditions. In particular, Captain Jeff Crews and Marine Superintendent Stewart Lamerdin were outstanding in keeping communication open during the per-cruise stages and keeping us informed and up-to-date on weather developments and forecast. Given the challenging conditions off the Oregon coast during this time of the year, it was great to have such good working relationship with both ship and shore crews.

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4. Rate how well the ship operator supplied scientific equipment and marine technicians supported this cruise (appropriate equipment, equipment operational and ready for cruise, calibrations, documentation, technicians trained and familiar with equipment).

rating: Very Good

comment:

Croy and Brandon - the martechs on the cruise were great at sea and helped us solve a variety of issues that propped up especially with the surface underway system and its interface with a variety of science party equipment. A few things, such as drainage in the underway sinks and fouling in underway sensor (turbidity), were still a bit of a challenge, but we managed to operate successfully and deal with them.

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5. Rate how well the scheduling of this cruise supported achieving the scientific objectives of this cruise (appropriate ship, year, season & dates, communications regarding schedules, online systems and scheduling process).

rating: Excellent

ship requested: Oceanus

comment:

Our objectives require operating under challenging winter weather/seas conditions and needed flexibility in terms of safe operations. The shore/ship crew of the Oceanus provided that flexibility and made the cruises highly successful.

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6. Rate the level of safety in shipboard and science operations (safety briefing and instructions, procedures & equipment).

rating: Excellent

comment:

Great instructions and procedures by the ship's crew.

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7. Rate how well the officers and crew and the manner in which the research vessel was operated contributed to achieving the scientific objectives of this cruise (communications, ship handling, deck procedures, attitude towards the science objectives, training, adequate number of crew, shipboard routine, etc.).

rating: Very Good

comment:

Great support in operations under challenging sea conditions.

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8. Rate how well the research vessel and its installed equipment contributed to achieving the scientific objectives of this cruise (material condition, readiness, living conditions and habitability, condition of lab spaces, design, layout, deck equipment, winches, cranes, frames, propulsion, power, etc.).

rating: Very Good

comment:

Conditions throughout the ship were very good. A couple of issues with the drainage of underway sinks were encountered but we were able to deal with them successfully.

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9. Number of science days lost:

due to weather:

due to ship equipment:

due to ship science equipment:

due to user science equipment:

comment:

We did loose the VMP - user provided equipment - and while that diminished the extent that our objectives were achieved, we did not loose science days and continued normal operations (minus the VMP deployments) after the incident.
