

PCAR

3 out of 12 completed

Please remember to complete your vehicle-specific PCAR

Summary of 2018 *Alvin* Debriefs

5 Cruises, 2 Debriefs

Alvin Debrief Highlights

- Overall, Pls were pleased with the performance and capabilities of the Alvin, with most of the objectives accomplished.
- Kudos to Sarah Fuller for helping make pre-cruise planning and move/demove run smoothly, particularly given the complexity of ops.
- Communication went well between the expedition leads and the scientists
- Impressed with the Alvin group overall, their professionalism, enthusiasm, attention to detail, and superb pilots
- Downlooking and GoPros (MISO) should be part of core Alvin systems

Pre-cruise and Mobilization

- Pre-cruise planning was generally complete and very well done
- Waiver forms for non-UNOLS member institutions are burdensome and require substantial time to receive university legal approval.
- While concurrent Alvin and Sentry ops were discussed pre cruise, not all critical parties were informed about the logistics, and it was challenging to ensure this happened given the complex ops planned.
- In port mobilization for the 2 cruises went smoothly and was sufficiently long.

Operations –vehicle performance

- Vehicle performed very well (“18 dives in 18 days”)
- Bottom times were among the longest the Chief Sci had ever experienced with Alvin

Operations- NDSF-provided equipment

- ❑ Intermittent and recurring ground in the variable ballast pump. Alvin used drop weights to compensate, requiring no alterations in ops.
- ❑ Alvin CTD did not function during the cruise and there was no spare.
- ❑ Event logger (SeaLab) and dive review (SeaPlay) were used for the 1st time and both worked well. Bugs and requests for additional features were communicated to NDSF.
- ❑ Chief sci appreciated not having to provide Alvin XY for dive planning and critical navigation information provided by Alvin group was in a widely used format.

Operations- User-provided equipment

- High success rate with integrating user-supplied equipment
- Down-looking camera failed (camera issue).
Camera and strobes are useful, recommendation for adding them to core systems.
 - Note: MISO external GoPro facilitated dive review (fast turnaround)
- Bushmaster was integrated with Alvin without issue.

General Recommendations

- Improve moisture control within the sphere
- Enable the availability of imagery data post dive (e.g., external GoPro) to facilitate quick dive review and pre-dive planning by scientists
- Establish data processing pipeline at the start of the cruise to improve efficient data delivery, including 4K video.

Summary of 2018 *Jason* Debriefs

4 Cruises, 4 Debriefs

Jason Debrief Highlights

- Overall a successful year for *Jason* with work in the Western & Eastern Pacific, and Mid-Atlantic.
- Significant operational improvements in cabled observatory (OOI) work and maintenance
- NDSF led a successful international workshop related to tether management for ROV operations; coupled with engineering dives this led to significant improvements in Jason ops, especially in single body mode.
- The majority of operational critical issues raised in 2017, were not deemed issues in 2018.

Jason Debrief Highlights

- A new NDSF website was developed that provides up to date information about Jason and its operational capabilities.
- A new data-logging system, SeaPlay was developed to replace the virtual van.

Jason debrief – Issues.

- The new Sulis 4K camera was consistently lauded for image quality, and overall operational efficiency; however several minor control issues were noted.
- **Suggestion:** Review user debrief documents and continue to refine camera operation where appropriate .

Jason debrief – Issues.

- In general, the new SeaLog data-logging system met with approval from science users; however some issues were noted, for example the inability to produce post-dive reports.
- **Suggestion:** Continue to refine Sealog system .

Jason debrief – Issues.

- Concerns were raised over rough handling of cable connectors
- **Suggestion:** Develop tools for manipulator practice.

Jason debrief – Issues.

- Training in Jason's systems, especially for either new or irregular users would be helpful; including communication with Jason team members about installation of user-supplied equipment on the ROV.
- **Suggestion:** At the pre-cruise phase assess users overall familiarity with Jason, and plan accordingly to provide extra time for training of inexperienced users. Consider inviting users with 'plug-in' equipment to come to NDSF and consult directly with Jason Ops Team.

Jason Debrief High Notes

- “Jason team went above and beyond in resolving ship-based power issues to the ROV to insure a successful cruise.”
- “The 4K camera system provided spectacular still and video imagery.”
- “Jason team members resolved an ICL instrument problem the manufacturer was unable to provide a fix for.”
- “The 12-on; 12-off schedule for the Jason team during service operations was a big improvement for both efficient operations and team morale”

Mid-2018 *AUV Sentry* Debriefs

4 Cruises Debriefed

Sentry Debrief Highlights

- Principle Investigators had positive reviews of the *Sentry* operations team's professionalism and hard work.
- Sentry was praised for efficiently integrating science-provided sensors with the vehicle.
- One cruise had a series of 17 uninterrupted dives that each produced excellent and complete data sets.
- Another cruise lauded Sentry's assistance in integrating USBL with the host ship, which was instrumental in carrying out the science objectives.

Pre-cruise and Mobilization

- Most Pls found pre-cruise discussions to be good.
 - In one instance, there were communication failures regarding the format that sonar data would be provided in. This issue was resolved at sea, but required significant effort.
 - The concurrent operations of Alvin & Sentry, although discussed during pre-cruise, did not seem to have been communicated to at-sea personnel.
- Mobilization was smooth in all of the cruises.
 - Integration of Sentry with different ships, in some cases, required some special effort, and the operations team was praised for accomplishing this task.

Operations- NDSF-provided equipment

- ❑ Acoustic interference between the sub-bottom profiler and acoustic modem was noted as a problem that should be addressed to ensure that the full sensor and communication capability of Sentry is available to science.
- ❑ Failures of the Reson multibeam sonar and its backup limited the ability of science to achieve its objectives on one cruise.
- ❑ Failure of the camera and forward-looking sonar required a mission change on one dive.
- ❑ On one cruise, advanced data processing by science was difficult as data formats and timeliness of data delivery did not meet science's expectations. The lack of knowledge by the operator on some of the sensors and workflow exacerbated the problem.

Sentry Ops Recommendations

- Consider improving the documentation of processing for multibeam and sub-bottom data.
- Data processors at sea need more knowledge regarding sensors, file formats, and the processing workflow.
- Old multibeam sonar and new back-up unit failed on 3 of 5 dives on one cruise, Reson no longer a responsive/supportive supplier.
- Resolve interference issues between acoustic modem and sub-bottom.