

Alvin de-brief summaries - 12/08

Five cruises for 67 dives

Luther/Nooner	Jun 2008	EPR
Lee/Di Iorio	Jul 2008	Juan de Fuca
Cowen/Becker	Aug 2008	Cascadia
Holden	Sep 2008	Juan de Fuca Endeavor
Sievert	Oct 2008	Guaymas EPR

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Overview:

All the PIs were very satisfied with their Alvin experience and felt that their scientific goals were all met or exceeded. For the most part these were repeat users of the facility and many noted significant improvements from previous years.

All personnel from Captain to deck crew, Expedition Leader, pilots, and engineers were at various times singled out for praise. The Alvin team was universally praised for its professionalism.

The following is an overview of some of the issues that came up during the cruises. Some of these are problems that have or will require some sort of corrective action while others are issues beyond the NDSF's control but presented here for their educational value to future users.

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Pre-Cruise Planning:

All PIs satisfied with planning in general with only a few issues.

There were many complex operations issues from integrating a variety of user-supplied equipment to the inclusion of a legally blind observer participating in an Alvin dive. These worked out really well.

There were continuing issues with securing clearances from foreign authorities and the Navy that have caused delays in operations in recent years.

In one case the EL was unavailable for the conference call and the Ops Manager filled in. The PI thought it would have been better if the EL had been available for the conference call.

A PI had requested Jason for his operations but got Alvin due to NDSF programming constraints. He thought this might not have been as successful as using Jason.

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Mobilization/Demobilization:

This went better than in previous years with all participants satisfied with the results. Those who showed up in port early to prepare were generally much better off. This was particularly important for projects with very short transits to the first dive site. We recommend science parties show up early as possible.

There is continuing dissatisfaction, for financial reasons, with not being allowed to sleep on board prior to the night before sailing (this is a ship operator's constraint, not NDSF).

Some PI's chose not to use the ship's agent because of prior dissatisfaction on that front.

When dealing with foreign authorities there can be unexpected delays. What was thought to be a simple small-boat transfer of personnel took 6 hours to complete because the local authorities decided they needed to clear the entire ship rather than just the arriving/departing scientists.

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Operations - Vehicle:

All PIs reported that Alvin performed well.

Batteries worked very well. Even with long dives, few dives ended due to lack of power

In one case the Schilling manipulator arm was not getting full grip. This was fixed at sea.

The only major problem was when one of the manipulator arms fell off early in a dive. This was handled very calmly and professionally but nonetheless that entire dive was lost in terms of science and so was another dive which had to be dedicated to retrieving the manipulator from the seafloor. The fault was diagnosed to be due to new Frangibolts that had been installed to replace the explosive bolts. New larger/stronger bolts have since been installed.

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Operations - NDSF Equipment:

Navigation continues to be an intermittent problem for some PIs.

For two programs both DVL and LBL were problematic with DVL frequently inoperable and sometimes neither operational. Another had good LBL but DVL did not function on a number of dives. Use of ship-board USBL while Alvin remained stationary at the seafloor could not always resolve which of two or more close sites Alvin was on, critical at Endeavor and CORK sites. A further issue relating to the shipboard USBL system was that this is what the AUV was relying upon to initiate its navigation. PIs reported that Bruce, Sean and Mark were active at sea trying to get these systems to work right.

The only other problems reported were a broken suction sampler on one cruise and the focus controls for the starboard manipulator 3-Chip camera inoperable on one cruise.

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Operations - User Equipment:

For this series of cruises there was much more user-provided equipment interfaced with Alvin than typically. These went quite well with few exceptions. This success was principally due to experienced PIs and from the PI's striving to minimize any changes to the science basket between consecutive dives.

Success in this area always requires thorough pre-cruise preparation and interaction between the science and Alvin personnel well in advance.

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Data hand-over:

There were some issues with DVD copying – not clear if this was hardware (e.g. Alvin Group DVD copier) or different batch of blank DVDs. There may be a longer-term problem with the status of the DVD copier.

Otherwise the PIs reported that data handover went very well with data provided both in disk-form and loaded onto PI-provided external disk drive.

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Other:

AUV operations could be programmed quite successfully alongside Alvin. The typical sequence was that the AUV be launched at 2am to start its program, Alvin dived the next morning and then the AUV was recovered after Alvin returned to the ship. 12 AUV dives were conducted in this way, 5 of which were fully successful.