ROV Jason / *Medea*

de-brief summaries – 2011/2012 - one year

Area	Project	Dates	Ports	Ship and cruise name
Santa Barbara, CA	Shallow-water Hydrocarbon seeps	Sept. 13 – 29, 2011	San Francisco, CA -> San Diego, CA	**R/V Atlantis** AT 18 - 11
EPR, 9º - 10º N	2 projects - geodetics ridge axis - pressure sensors	Oct. 4 – 29, 2011	San Diego, CA -> Balboa, Panama	**R/V Atlantis** AT 18 - 12
Mediterranean	Brine Pools	Nov. 25 - Dec. 8, 2011	Piraeus, Greece <->	**R/V Atlantis** AT 18 - 14
Cayman Trough	Vents	Jan. 6 – 28, 2012	Port Everglades, FL, USA <->	**R/V Atlantis** AT 18 – 16
'North Pond' Mid-Atlantic Ridge	CORKs and borehole servicing	April 11 – May 10 2012	Freeport, Bahamas -> St. John's, Canada	**F/S M.S.Merian** MSM 20-5
Barbados	Seeps	June 1 – 18, 2012	Bridgetown, Barbados <->	**R/V Atlantis** AT 21 – 2
Juan de Fuca	Cascadia OBS deployment / recovery	July 10 – 25, 2012	Seattle, WA, USA <->	**R/V Thompson** TN 283
Juan de Fuca	*Multi PIs* CORKS, Vents - Axial seamount Optical modems OOI	Aug. 16 – 26, 2012	Astoria, OR, USA <->	**R/V Langseth** MGL 1216

DESSC Debrief

- 1. Pre-Cruise Planning
- 2. Mobilization
- 3. Operations – vehicle
- 4. Operations –NDSF-provided equipment
- 5. Operations – User-provided equipment
- *6. NDSF Personnel – Expedition Leader*
- *7. NDSF Personnel – Team as a whole*
- 8. Data hand-over
- 9. Demobilization
- 10. Recommendations

1. Pre-Cruise Planning:

All PIs felt that pre-cruise planning went well in general with only one remark:

- Failure at the planning stage (Science or UNOLS operator) to obtain diplomatic clearance for the locations where moorings were located - Clearance for Bajan waters but nor for Trinidad & Tobago or Venezuela.

2. Mobilization/Demobilization:

All went really well

3. Operations - Vehicle

In general Jason performed very well, except for:

- Introduction of the new LARS system was achieved over the course of the first cruise after some initial integration issues.
- The ship's winch was damaged during transfer from the R/V Thompson to the R/V Langseth, the ship came into port mid-cruise for repair, part of the science team left without accomplishing their cruise goals.
- For one cruise the A/C in the control van was not sufficient – problems with overheating.

4. Operations NDSF - provided equipment

Navigation (USBL and LBL) worked really well in general

- On one dive it took 6h until anyone noticed that the underlay ingested into the dive was actually from the wrong ship's multibeam (a completely different site!)
- On one cruise, there were increasing discrepancies between predicted locations and where the instruments were found by Jason. -> This indicated that there was an increasing problem with the accuracy of the Jason navigation.

4. Operations NDSF - provided equipment *cont.*

Lighting and Cameras worked well in general

•The HDTV science camera showed limitations in comparison to the pilot's camera: at full-zoom, the NDSF camera did not deliver as much detail, zoomed-out it it provided a wider field of view but the lighting was insufficient.

•The NDSF HDTV camera was found to be less effective than the pilots InSite Mini-Zeus for science use

•Mapping using the **Reson multibeam system** has been used to good effect on 4 cruises over the reported year, *except that*

- the Reson multibeam system did not work in the brine pool.

5. Operations - User-provided equipment

Handling and interfacing user-provided equipment worked really well.

• One item that caused a challenge was a new mini-CORK mooring that was dropped to the seafloor and then needed to be redeployed using Jason. The science team had miscalculated the weight/buoyancy of the system, but happily the technical excellence of the Jason team saved the day!

- > this demonstrated the excellent capability of Jason and the pilots to do more of this important CORK-servicing work.

8. Data hand-over:

Data hand-over went well, except for one remark:

- The PI found that 6 of 51 DVDs reviewed were in fact blank disks with no data.

10. User Recommendations

- The practice of establishing a standard pattern of both generating a dive-plan ahead of each dive and talking that through with the Expedition Leader is probably worth considering.
- UNOLS should invest in a better planning tool for ship-time requests/cruise planning that ingests the planned field operational areas showing nations' EEZ boundaries to ensure diplomatic clearance.
- The ROV Jason team should work on developing a better "repeater" station, outside the control van which has both higher quality video-feed and uses more screens to project that information in the main lab.
- For such shallow work, the standard-configuration Jason ROV was probably 'overkill'. It might be worth considering how to develop a shallow-water option for the National Facility.

Cancellation of the Thompson cruise has led to the total loss of one year of data from one osmosis-sampler and represents a loss of $0.5 million in research-effort costs and has also impacted 2 PhD students working with the PI.

-> It would be useful if, in future occasions when NDSF operations have to be disrupted [the nature of going to sea dictates that such problems will recur], there was an established protocol that helped decide which cruises do, or do not, get canceled.