Alvin Debrief Issues

Doppler-Based Navigation

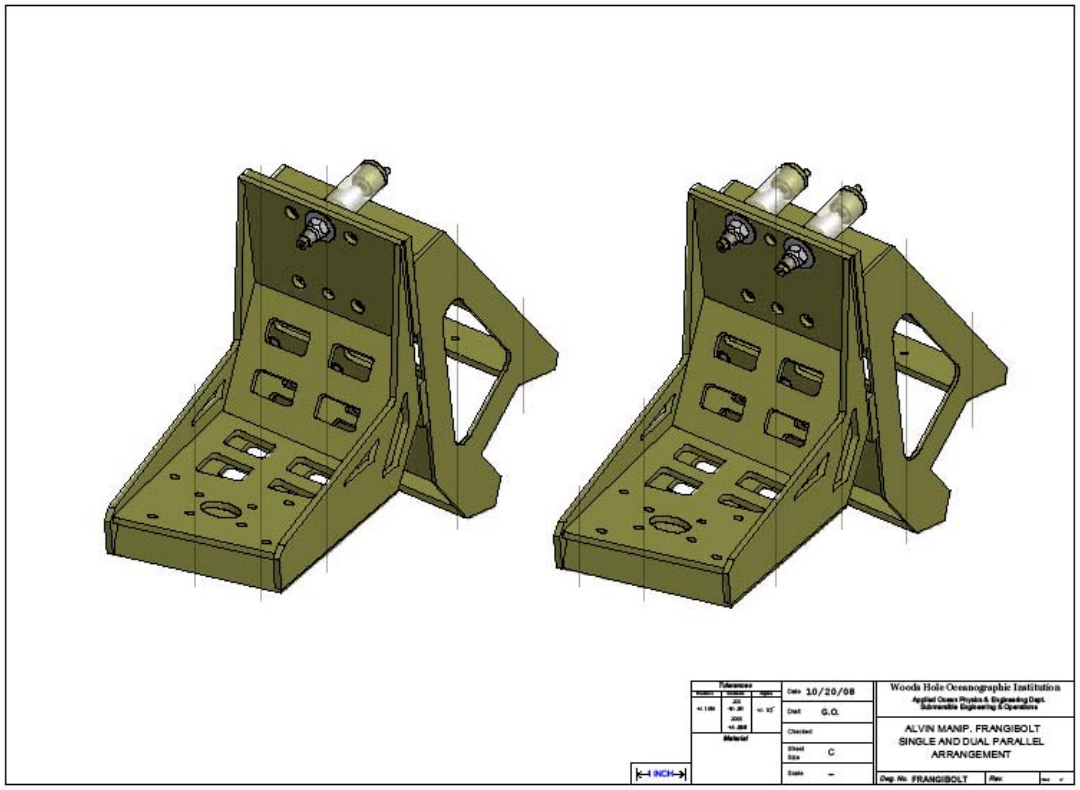
- Both RDI 1200 KHz experienced total failures during the Lee and Cowen legs.
- Borrowed a 300 KHz RDI from John Hopkins University while ALOPS units repaired.
- 1 newly repaired 1200 KHz failed again on Sievert below 2000M.
- Spare 1200 KHz currently installed and operational.

LBL Navigation

- 455 ASP finally died after 30 +/- years operation at the end of Holden Leg.
- Conducted N456 trials during Hoke Seamount / Engineering dives with mixed results.
- Problems with DS7000 led to sporadic LBL in Guaymas during Sievert leg but was resolved and operational on the 9N EPR dives.
- N 456 now tested and will be in service.1st Qtr '09

Alvin Debrief Issues

Frangi-Bolt Failure



Alvin Debrief Issues

Frangi-Bolt Failure

- Failure analysis found that the new design put the frangi-bolt under loads that were unanticipated in the original design.
- As a stop gap measure a second parallel Frangi-bolt was installed which roughly doubled the strength and brought them up to near the strength of an explosive bolt.
- A redesign of the Frangi-bolts is underway which will increase the shear bolt size from 3/8” to ½”.
- The newly manufactured bolts should be installed by the 1st diving leg in 2009.

Alvin
Milestones, Improvements and Issues

General

- Received Reson SeaBat mapping sonar to replace the Imagenix scanning sonar. Currently installed and undergoing operational testing to determine the best setup and procedures for the submersible.
- Increased our ICL sparing for the major water samplers.
- Recovered an ONR sound source on Hoke Seamount.
- Recovered the MBARI AUV during the Holden leg after the vehicle became stuck

Operations Crew

- Bruce Strickrott has survived his 1st full year as Expedition Leader.
- Mark Spear was named Mechanical Section Leader.
- Sean Kelley continues to improve as a pilot.
- David Walter, Korey Verhien and Mike Skowronski hired this year.
- Revision to the cruise leave policy – improve retention and quality of life

Jason Debrief Issues

Kraft manipulator reliability issues

- Arms are getting older and more difficult to maintain, need to consider replacement, ($250K – titanium, Alvin compatible)
- Modified Kraft Jaw in ‘08 to increase closure force, resulting in slower speeds at low force settings
- Adding 2nd Kraft to Jason, will use one modified stronger jaw and one un-modified, faster jaw, to take place early 09

Jason Debrief Issues - 12/08

Mosaic and SM2K results are good

- Confusion about how to perform the surveys; surveys were performed correctly
- Established SM2K survey procedure information on web; recommend science party look over in advance

  http://www.whoi.edu/page.do?pid=11303
- Developing similar documentation for mosaicing
- Renew efforts to brief at-sea ops team in proper procedures

Jason Debrief Issues - 12/08

Turnaround Time

- NDSF published document defining turn around time policy (on web)
- Current model provides flexibility at the discretion of the EL when working with the PI (both pre-cruise and at sea)
- Have been doing shorter turnaround times and as previously noted, it is our intention to continue to make incremental advances in this area.

Jason
Milestones, Improvements and Issues

- New vans fully operational in 2008 – no complaints so far!
- LBL/USBL navigation upgrade and full integration
- Tool van replacement in ‘09 if funds available
- Added full depth homer beacons
- Acquired spare deck crane which will require new base and minimal refurbishment

Sentry debrief issues

- INS “lock up”, resulting gaps in data
  - Manufacturer has suggested an improved setup
  - Test by putting INS on Oceanus for a short WH-WH cruise
- DVL parsing error
  - Software repaired during the cruise
  - solution will be integrated into standard nav code
- Bottom following: slow down and stall in rough terrain
  - algorithm changes
  - simulation testing
- Multiple failures of shear pins on the thrusters
  - replace shear pins with proper couplings
  - long term cycle test
- MB-System: slow data pipeline
  - significant improvement with experience during and after the cruise
  - continued advice/support from MBARI and MB community
  - attend developers meeting at AGU Fall Meeting

Sentry Other Improvements

- Improved Multibeam tuning
  - increased swath (from 250m to > 300m)
  -fewer bad points, easier editting
- Drag reduction/propeller efficiency
  -increased speed and range
- Integrate Tethys mass spec (Camilli) under NASA ASTEP program
  - first deployments on Valentine cruise with Alvin, summer 2009
  -integrate with autonomous control algorithms
- Navigation: improved calibration and real-time LBL
- Camera and strobe installation
  - latest Nereus camera and software
  - LED strobe