

Sentry Debrief 2012

3 cruises (post-refit)

- very deep water cruise
- telepresence
- recon for upcoming field program

Pre-Cruise Planning

- In general went very well
 - Well-coordinated
 - *Sentry* team very communicative
- Despite extensive pre-cruise discussions for one cruise, inadequate pre-cruise testing resulted in significant problems

Mob/Demob

- Generally went well, even under difficult circumstances
- Some communications issues with ship resulted in delay in mobilization for one cruise
- Wrong crane sent for demob of one cruise caused delay

Operations - Vehicle

- Vehicle performance was good for 2 cruises
- Multiple operational problems with *Sentry* and USBL nav on one cruise resulted in significant loss of time. *Science objectives were not met.*
- Some communications issues noted between Ops Team and Ship
- PHINS calibration issue
- Glitch in mission planning software
- Vehicle turn-around time consistently good
- Telepresence worked well, thanks largely to efforts of NDSF personnel

Operations – NDSF-provided equip

- USBL -- generally fine, but problems during deep water ops:
 - Apparent limitations of USBL
 - Acoustically noisy ship (?)
- Multibeam
 - Worked (extremely) well

Operations – NDSF-provided equip

- Sidescan
 - Worked well
- Sub-bottom Profiler
 - Worked well
- Magnetometers
 - Data noisier than on ABE
 - Apparent interference from DVL

Operations – NDSF-provided equip

- Cameras
 - Overlap of adjacent photographs disappointing during some dives, but software glitch identified and fixed before end of cruise
 - For geologists & some biologists, existing camera resolution was fine for meeting science objectives, but resolution not adequate for some detailed biological investigations
 - Lighting was good

Operations – User-provided equip

- Eh sensor
 - Noisy data on one cruise (electrical noise)
 - Fine on subsequent cruise

Data Handover

- Generally fine
- During 1 cruise - more data acquired than expected – almost not enough media
- Data consistently delivered in a timely manner
- Team was flexible accommodating needs with formats sent ashore
- Telepresence data transfer and processing workflow worked very well

Recommendations

- NDSF vehicle upgrades should include *requirement* of post-improvement set of engineering tests before the vehicle is used for a funded science program
- Implement training schedule to strengthen operational team
- User-friendly science interface accessible throughout ship for tracking mission status
- *Sentry* should be equipped with “park” mode (like ABE had) – anchor on seafloor and await acoustic command for recovery

Recommendations

- A more systematic approach to file naming (including version number) for *ALL Sentry* files.
- *Sentry* can delivery the right sensors to the right part of the ocean to conduct cutting edge research, but the quality of some data (e.g. maggie/Eh/electrical noise) could be improved