

#24 NanTroSEIZE Project Management Meeting and
Exp. 348 Pre-expedition meetings
Memo

23-24 March 2013
Beacon Hotel & Corporate Quarters

Attendees:

Brandon Dugan (partially)	: Rice University, USA
Gaku Kimura	: University of Tokyo, Japan
Greg Moore	: University of Hawaii, USA
Demian Saffer	: The Pennsylvania State University, USA
Harold Tobin	: University of Wisconsin, USA
Mike Underwood	: University of Missouri, USA
Geoff Wheat	: Monterey Bay Aquarium Research Institute, USA
Takehiro Hirose	: JAMSTEC/ Kochi, Japan
Toshi Kanamatsu	: JAMSTEC/IFREE, Japan
Nobu Eguchi	: JAMSTEC/CDEX, Japan
Moe Kyaw	: JAMSTEC/CDEX, Japan
Nori Kyo	: JAMSTEC/CDEX, Japan
Tomo Saruhashi	: JAMSTEC/CDEX, Japan
Ikuo Sawada	: JAMSTEC/CDEX, Japan
Koji Takase	: JAMSTEC/CDEX, Japan
Sean Toczko	: JAMSTEC/CDEX, Japan
Bob Pilko	: Blade Energy. Inc, USA
Yoshi Kawamura	: IODP-MI

Discussed Items:

1. Araki update on the C0002G LTBMS and DONET (Araki)
2. IODP Exp 338 Riser Operations - lessons learned and ops (Saruhashi)
3. 348 Operations Plan
4. SD-RCB
5. Exp 348 C0010 Ops
6. Exp 348 C10/C2F Logging Plan
7. Exp 348 Staffing
8. Contingency
9. Action Items

Appendix A: C0002F Operation Plan
Appendix B: C0010A Operation Plan

1. Araki update on the C0002G LTBMS and DONET

- Jan 2013 connection finally made by Hyperdolphin. 24 Jan first data day.
- Tidal effect in tilt data is about 5x larger than anticipated (1.5 microradians)
- Data currently recorded at land station, then data snapshots periodically transferred to other places, incl. Penn State.
- About 6 months until data can be released on website.
- Recorded data from the package before connection for 2 years – pore pressure record of the Tohoku event.
- Also pressure record from Exp 338 drilling. Disturbance caused by nearby riserless drilling – unclear. Only disturbance seen for ONE borehole.
- Near future plan: airgun shooting around the boreholes and DONET sites.
- Also in-situ calibration of borehole pressure gauges.
- For Site C0010 – will start most instruments as soon as cemented in – battery recording until connection made with DONET.
- Single packer is preferable and relatively longer cement column is needed (maybe attach schematic diagram?)
- Current T is ~37 at ~900 m depth.
- Planning for DONET-2 off Shikoku is underway. Planned deployment map shown.

2. IODP Exp 338 Riser Operations - lessons learned and ops (Tomo)

Three main foci: Typhoon down time, BOP failure, EDS

Typhoon

- Typhoon #21 caused 11.1 days lost time. Slow speed and unclear storm track main causes of WOW.
- Recommend avoiding typhoon season by replacing riser ops with the riserless LTBMS (for 348)
- Fill up downtime with SD_RCB project (for 348). The test location has to be confirmed (EPSP, fishery etc.)

BOP

BOP failures included: parted conduit line (at gooseneck) – to be replaced and reinforced, use dual lines as replacement; POD ram not closing – check valve leaking.

EDS

- Cold fronts: were not identified in previous Nankai MetaOcean report. During Exp 338, every 1-2 weeks one came through. And each time, wind direction would swing around within a few seconds.
- Combination of cold front impact and current drove ship off site – caused EDS; which then through high-speed drifting caused damage to the IFJ when it struck the hull.
- CDEX is re-examining the EDS criteria, with an eye towards preventing a similar occurrence (e.g. Cold fronts of 20-28m/s wind gusts – standby event, >28 m/s gust = disconnect). In 2012, the standby event happened 12 times - other years, much less often. Worst case scenario 12.5 times cold fronts plus 2 typhoons – more than 37 days of contingency time. So the bottom line is ~37 days of WOW contingency time included in the plan.

- DPO training being revised
- MES vessel trajectory w/strong moment control
- Optimize trajectory after EDS
- More closely monitor heading changes

Recommend avoiding using the underreamer and the dual elevator system for faster drilling ops – implies removal of the 16” casing. The idea was to save time in drilling, but this was not the actual case.

3. IODP Exp. 348 Operation plan (Takase)

159 days in total

Do riserless first (C10) to put that into typhoon season, then C2 riser drilling.

15.5 days to set BOP.

With 24 days of typhoon WOW – 23 October BOP is set.

13 days of operational contingency days for non-typhoon WOW

Current hole condition: Much concern over hole stability, since accretionary prism VERY unstable, tricky formation. Reaming plan could cost operations days, especially if unsuccessful. Still estimated high potential for stuck drilling pipe. Currently Hole completed with 1.12 sg mud KNPP filled – cement plug to 40 m below 20” casing. Hole instability Torque during reaming began at 1630 mbsf. Sidetrack proposal to advance the hole from the cement plug.

One other idea is to use small casing. Advantages are: faster drilling, lower circulation requirements, lower drilling mud loading (reduced cuttings load). Disadvantages include: ending with 6-inch hole at 7000 mbsf, SD-RCB absolutely REQUIRED for coring, and careful rethinking of observatory configuration.

Araki agreed that the LTBMS configuration could be small diameter, but even so, would be tight.

17-inch hole drilling without LWD for setting 13-3/8-inch CSG, then LOT
NO Wireline

Base case: 12.25-inch hole drilling with LWD to around 3600 mbsf, then open hole to 14.5-inch for setting 11-3/4-inch liner casing

Best case: 12.25-inch hole drilling with LWD to around 4400 mbsf for setting 9-5/8-inch casing

10-20 m offset would include 5° angle (~3° per 30 m)
APWD LOT OK, BUT MDT (pore pressure) needed

Deviation Track – will LTBMS carrier & instruments pass sidetrack?

4. SD-RCB system – (Kyo)

Reviewed the issues from the test run at end of Exp 338 – flow test at 500 mbsl successful (800 gpm?). Mis-matched parts prevented actual coring run test.

Core size 80 mm. length 9.5 m. Narrower kerf, larger core size than standard IODP. Previous test failed mechanically, but simple mods necessary.

Modification schedule Nov/Dec land test, with possible sea trial during 348, to be ready for 2015.

Industry small WL coring system also needs to be investigated.

5. C0010 operations (Takase)

30 days (with 4 days of contingency in it).

GeniusPlug is on hand as a contingency, or if the LTBMS operations begin to threaten riser drilling window.

The cement volume for C10 extended borehole will be increased from ~20 m below CSG shoe to the top of the sensor carrier.

Confirm the availability of the A3 retrievable casing packer.

One other possible contingency operation includes the TDCS (Turbine Driven Coring System).

C2 riser operation has priority over C10 LTBMS operation.

6. Logging plan (Moe)

C0010A plan: MWD, APWD, GR-RES (Arc-vision) no images.

C0002F plan:

17-inch hole – MWD, APWD + gamma + ArcVision

12.5-inch MWD, APWD, GR, caliper (ultrasonic) with geoVision and sonicVISION;
mud-logging with NO wireline

Bob Pilko mentioned that Halliburton logging and coring services are very good. Moe mentioned trying to get bids from both SLB and Halbtrn.

MDT and LOT desired by scientists – Moe will look into Baker-Hughes to see if they will bundle their logging and coring services. These are needed to help determine not only pore pressure, but also principle stresses.

Stethoscope (LWD MDT tool) – although expensive, Moe will look into seeing if we can rent tool for at least the lower section.

7. 348 Staffing (Toczko and Scientists)

About ~45 days at sea for those working with cuttings and core samples. Bring them in as late in the expedition as possible. Perhaps late November through Jan 10.

What if the Expedition ends early? Perhaps it would be possible to arrange a dockside science party.

Riser part staffing straw list:

2x Co-chief scientist,

3x logging specialist,

4x sedimentologist,

4x structural geologist,

1x micropaleontologist (shorebased?),

4x physical property specialist (includes 1 downhole PP type person),

0x paleomag specialist (handled by MWJ & Kanamatsu-san),

2x mud gas chemist,

1x inorg geochemist,
 ? microbiologist.
 About 21 scientists (without 'doubling up')

LTBMS science party:
 1x Co-chief scientist,
 1x chemist,
 1x microbiologist,
 5-7 observatory scientists (thermistor string? Pressure?).
 About 10 overall.

31 scientists for entire 348 "Science Party". The second call should be applied if needed, based on the results of the first call.

Staff	Time Period	Duration	Operation	
CC	18 Aug - 12 Sept	25 days	Riserless observatory recovery, LTBMS deployment	Demian Saffer
SP	18 Aug - 12 Sept	25 days	(see above)	Science Party (TBD)
1 "CC/SC"	29 Sep – 13 Oct	2 wks	13-3/8 LWD, csg	Kyu Kanagawa
2 "CC/SC"	13 Oct – 27 Oct	2 wks	13-3/8 LWD, csg OR /11-3/4 (9.5) LWD, csg	Greg Moore
3 "CC/SC"	27 Oct – 10 Nov	2 wks	11-3/4 (9.5) LWD, csg	Gaku Kimura
4 "CC/SC"	10 Nov – 24 Nov	2 wks	11-3/4 (9.5) LWD, csg	Mike Underwood
CCs	15 Nov – 10 Jan	57 days	11-3/4 (9.5) LWD, csg	Takehiro Hirose, Harold Tobin
SP	26 Nov – 10 Jan	45 days	11-3/4 (9.5) LWD, csg	Science Party (TBD)

CONTACT PMOs about the Call for Participants.

8. Scientific Contingency operation plan:

Big chunks of time – no real contingency envisioned for Exp 348.

If we complete operations early, 1st idea is to return to port.

Possible C6 or C7 operations proscribed by lack of UWTV.

SDRCB contingency (CDEX wish list) – drilling sea trial for it.

- Drill somewhere in the Low Current Area (LCA)?
- C0001 above the sticky zone?
- C0010 to get some cores?
- Any Nankai site already approved.

Return to C0010 if not completed.

For C0010 if no LTBMS, then GeniusPlug.

ROV operation to calibrate pressure gauges at LTBMS sites. (replacing proposed hyperdolphin ops).

More riser coring? 2300-2400 mbsf now, but hard to add more, because it is early in the expedition.

Any riserless site in case of a period where riser is impossible, but not done with it yet? C0010 riserless standard coring in a new hole.

2014-2015 operation plan

As well as establish of Project Coordination Team (aka PMT) should be considered at the first CIB meeting.

PMT scientists requested that coring interval around the mega-splay has to be longer (the current operation plan is too short), ideally 200 m above and below the fault is necessary, although the location of the fault is not clear at the moment.

PMT scientists insisted that C2 hole should be finished with installation of LTBMS, however especially US scientists will not commit the sensor development until the bore-hole really exists.

C6/C7 riserless observatory also should kept in planning, if FY13 operation ends by 4,400 mbsf (best case scenario), consider riserless installation in FY15.

PMT agreed on holding regular Skype conference for Exp. 348 and beyond.

9. Action Items:

- Follow up on options within the 348 logging plans.
- Follow up with PMOs on call for participants.
- Define title and duties of early sailing "SC/CC" people.
- SD-RCB location and cores.
- Prospectus drafting for 348 – Sean will start in a week, send to CCs, goal to get to TAMU in ~ 3 weeks.
- New 2014 plan including revised coring plan and also 7-inch liner/casing for the megasplay.
- Recommendation to include a C0006/C0007 riserless LTBMS in the 2015 IODP primary plan IF time allows.

Appendix A: C002F Operation Plan

Operation	Days	Sub Total (days)	Total (days)	Total (days) - 9-5/8 csg
1) Transit, Deploy Transponders, Retrieve corrosion cap, Preparation for Spud				
Transit from Shingu to the site.	0.5			
Deploy 10 transponders / calibration	1.0			
Well head survey and recover corrosion cap	1.0	4.5	4.5	
Preparation for run BOP & Riser	2.0			
2) Run & set BOP and Riser				
Run BOP and Riser w/fairing @ low current area	7.0			
Drifting from low current area to the site	2.0	11.0	15.5	
Test BOP	2.0			
3) Set 13-3/8" Casing				
DOC	2.0			
Reaming original hole -- 860 - 2000 mbsf (260 m/day)	6.0			
Drill 17" Hole w/LWD 2000 m to 2300 mbsf -- 2000 - 2300 mbsf (180 m/day)	4.0	19.0	34.5	
Run & Cement 13-3/8" Casing	5.0			
Test BOP	2.0			
4) Set 11-3/4" Casing				
DOC & LOT	2.0			
Cut 10-5/8" RCB core 100 m interval -- 2300 - 2400 mbsf (25 m/day)	4.0			
Drill 12-1/4" Hole w/LWD to 3600 mbsf -- 2300 - 3600 mbsf (100 m/day)	13.0	43.0	77.5	
Open hole to 14-1/2" w/Under Reamer -- 2300 - 3600 mbsf (100 m/day)	13.0			
Run & Cement 13-3/8" Casing	5.0			
Test BOP (3 times)*	6.0			
4)* Set 9-5/8" Casing				
DOC & LOT	2.0			
Cut 10-5/8" RCB core 100 m interval -- 2300 - 2400 mbsf (25 m/day)	4.0			
Drill 12-1/4" Hole w/LWD to 4400 mbsf -- 2300 - 4400 mbsf (100 m/day)	21.0	38.0	72.5	
Run & Cement 9-5/8" Casing	5.0			
Test BOP (3 times)*	6.0			
5) Suspend hole				
Set cement plug or Bridge plug in hole	2			
Retrieve BOP & Marine Risers	6	8	85.5	80.5
6) Set corrosion cap, Retrieve Transponders, Transit				
	2.5	2.5	88.0	83.0
7) Wait on Weather, Typhoon Evacuation & Mechanical Down Time				
Mechanical Down Time (Operation Time x 4%) - 4 days	4.0			
Wait on Weather (Operation Time x 15%) - 14 days	14.0	42.0	130.0	125.0
Typhoon Evacuation (2 times x 12 days) - 24 days	24.0			

Appendix B: C0010A Operation Plan

Site: C0010A (NT2-10) Water Depth: 2552.2 mBRT (2523.7 mBSL)			
Operation	Days	Sub Total (days)	Total (days)
1) Transit, Deploy Transponders, Retrieve corrosion cap, Preparation for Spud			
Transit from Shingu to the site.	1.0	3.0	3.0
Well head survey and recover corrosion cap.	1.0		
Deploy 4 transponders/calibration	1.0		
2) Retrieve casing packer w/Genius Plug			
Run packer retrieving tool @ low current area	1.0	5.0	8.0
Drifting from low current area to the site	1.0		
Re-enter and RIH	1.0		
Unset and POOH to above seabed	1.0		
Drifting from the site to low current area, POOH to surface	1.0		
3) Drill 8-1/2"hole			
Run drilling assy while drifting	1.0	3.0	11.0
Re-enter and RIH	0.5		
Drill 8-1/2"hole 100m below 9-5/8"CSG POOH to above seabed,	0.5		
POOH while drifting	1.0		
3) 9-5/8"Casing Scraping			
Run 9-5/8"casing scraper while drifting	1.0	3.0	14.0
Re-enter and RIH	1.0		
POOH to above seabed, POOH while drifting	1.0		
4) Set Completion (LTBMS)			
Run LTBMS assy	6.0	10.0	24.0
Drifting from low current area to the site	2.0		
Re-enter and RIH, land CORK head on wellhead, cementing	1.0		
POOH running tool while drifting	1.0		
5) Recover Transponder			
Test pressure logger, recover transponders	2.0	2.0	26.0
6) Wait on Weather, Typhoon Evacuation & Mechanical Down Time			
Mechanical Down Time (Operation Time x 5%)	1.0	4.0	30.0
Typhoon Evacuation (1 times x 3 days)	3.0		