

Operations Task Force Meeting Report

June 5th-6th, 2006

**IODP-Management International Office
Washington D.C.**

Meeting Attendees

Operations Task Force (for June 5-6, 2006 Meeting)

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1. Introduction

1.1. Lead Time Planning

The OTF meeting began with a review of logistics and the agenda. Following the presentation of this introductory material, OTF discussed the current model of developing FY+2 platform schedule options at the annual June OTF meeting and the approval of one of these options at the annual late summer (August) SPC meeting. For example, SPC will approve an FY08 schedule at its August 2006 meeting. A problem with this model is that by the time SPC approves a FY+2 schedule there are only 13 months until the start of operations for that Fiscal year. This poses problems with staffing, lead-time acquisitions and budgeting. OTF discussed the idea of generating an approved schedule the covers FY+2 and several months of FY+3 (**Figure OTF-1**). Once this rotation begins, SPC is then approving schedules at least 15 months ahead.

In effect, by approving operations for Canterbury and Wilkes Land (both are FY09 Operations), we will move into this mode.

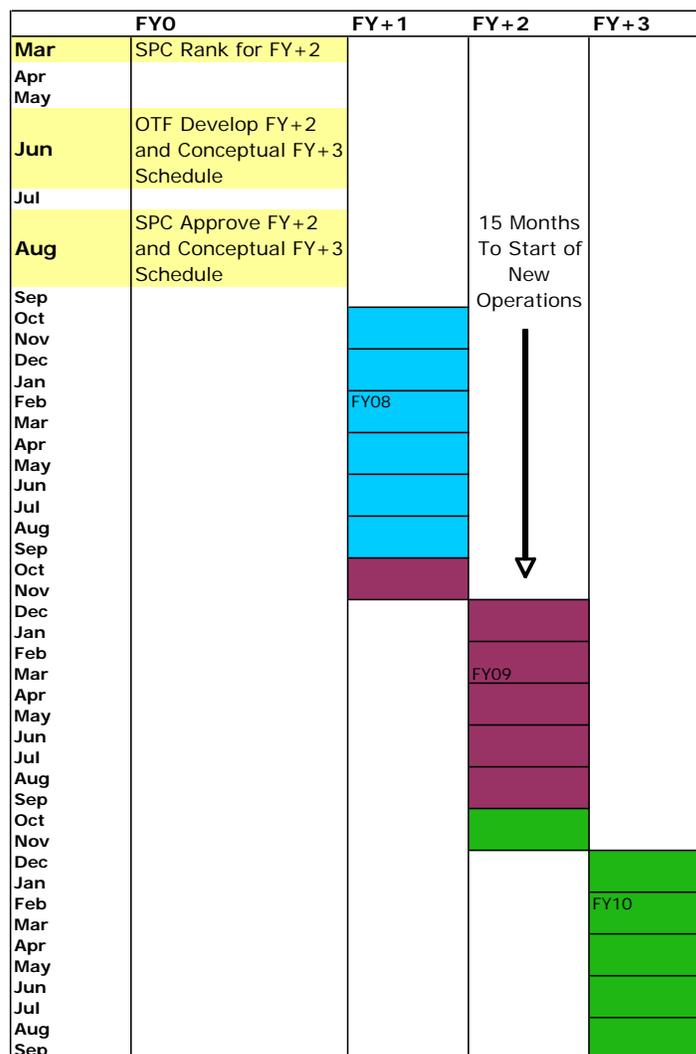


Figure OTF-1: Graphical representation of OTF suggestion for moving to 15-month lead time for scheduling of IODP operations. Scheduling would entail approval of expeditions for FY+2 and at least 1 FY+3 expedition.

2. FY08 Operations

2.1. Review of Proposals residing at OTF

By way of background, this section (1.2) provides information regarding the proposals residing at OTF and several SPC consensus items and motions that resulted in the current group of OTF proposals and their overall priority.

2.1.1. Proposals forwarded to OTF by SPC

The following proposals were under consideration for this particular OTF meeting:

Forwarded from Sept 2003 SPC meeting

519-Full2	South Pacific Sea Level (Great Barrier)
545-Full	Juan de Fuca Hydro (2nd exp)
564-Full	New Jersey Sea Level
589-Full3	Gulf of Mexico (2nd exp.)

Forwarded from June 2004 SPC meeting

603A-F2	NanTroSEIZE Phase I
603B-F2	NanTroSEIZE Phase II
477-Full4	Okhotsk/Bering Pliocene/Pleistocene
482-Full3	Wilkes Land
553-Full2	Cascadia Hydrates (2nd expedition)
600-Full	Canterbury Basin
621-Full	Monterey Bay Observatory

Forwarded from March 2005 SPC meeting

603C-Full	NanTroSEIZE Phase III
595-Full3	Indus Fan and Murray Ridge
626-Full2	Pacific Equatorial Age Transect

Forwarded from March 2006 SPC meeting

677-Full	Mid Atlantic Ridge Microbiology*
603D-F2	NanTroSEIZE Observatories*
605-Full2	Asian Monsoon*
549-Full6	Northern Arabian Sea Monsoon*
537A-F5	Costa Rica Seismogenic Phase A*
537B-F4	Costa Rica Seismogenic Phase B
505-Full5	Mariana Convergent Margin
659-Full	Newfoundland Rifted Margin

* = Group 1 proposals from March 2006 SPC ranking

2.1.2. Pertinent SPC consensus items regarding proposals at OTF

The following three SPC consensus statements provide background as to the status of proposals at OTF. Based upon the these consensus statements all the proposals forwarded to the OTF from the September 2003, June 2004, and March 2005 SPC meetings will remain with OTF even if

they are not scheduled. Proposals 537B-Full 4 (Costa Rica Seismogenic Phase B), 505-Full5 (Mariana Convergent Margin) and 659-Full Newfoundland Rifted Margin will revert back to SPC if not scheduled.

SPC Consensus 0503-16: The SPC recommends that all fully or partially unscheduled proposals forwarded previously to the Operations Task Force as part of the highest priority Group I should remain for now with the Operations Task Force for them to consider in developing drilling schedule scenarios for FY2006 and beyond. This group includes Proposals 477-Full3 Okhotsk/Bering Plio-Pleistocene, 482-Full3 Wilkes Land Margin, 519-Full2 South Pacific Sea Level, 545-Full3 Juan de Fuca Flank Hydrogeology, 553-Full2 Cascadia Margin Hydrates, 564-Full New Jersey Shallow Shelf, 589-Full3 Gulf of Mexico Overpressures, 600-Full Canterbury Basin, 603A-Full2 NanTroSEIZE Phase 1, 603B-Full2 NanTroSEIZE Phase 2, and 621-Full Monterey Bay Observatory

SPC Consensus 0503-22: The SPC forwards the top three of nine ranked proposals, 603C-Full NanTroSEIZE Plate Interface, 595-Full3 Indus Fan and Murray Ridge, and 626-Full2 Pacific Equatorial Age Transect, for the Operations Task Force to consider in developing drilling schedule scenarios for FY2007 and beyond.

SPC Motion 0603-21: The SPC in principle forwards the top thirteen of seventeen ranked proposals to the Operations Task Force (OTF) for potential scheduling in FY2008 and beyond, with the top six assigned to the highest priority Group I and the next seven assigned to the lower priority Group II. In practice, however, the SPC retains hold of the third-, eighth-, eleventh-, twelfth-, and thirteenth-ranked proposals because of notable deficiencies in the completeness of their associated site-survey data. The committee will reconsider forwarding those proposals individually to the OTF in the event of any improvement in their site-survey completeness. As in the past, proposals in Group I will remain with the OTF for future scheduling until further notice, and those in Group II will return to the SPC for the next review and ranking exercise if not already scheduled by then.

2.2. Previous OTF/SPC action for FY08

This section of the OTF report contains several SPC motions related to previous SPC approval of vessel schedules for portions of the FY08 and conceptual schedules FY09/10 schedule.

2.2.1. Chikyu Operations

At its October, 2005 SPC meeting, SPC approved three Stage 1 NanTroSEIZE expeditions (beginning in Sept 2007) and the start of riser (Stage 2) operations in mid 2008.

SPC Motion 0510-21: The SPC approves the FY2007-08 operations schedule for the Choky as proposed by the Operations Task Force and derived by the NanTroSEIZE Project Management Team from Proposals 603A-Full2 NanTroSEIZE Reference Sites, 603B-Full2 NanTroSEIZE Mega-Splay Faults, and 603C-Full NanTroSEIZE Phase 3: Plate Interface. The recommended expeditions will begin in September 2007 with NanTroSEIZE Stage 1 non-riser drilling and continue later in 2008 with NanTroSEIZE Stage 2 riser drilling following a period of annual maintenance and further testing. The committee recognizes that these planned operational stages do not correspond directly with the organizational scheme of the individual drilling proposals.

2.2.2. SODV operations

At its March 2006 meeting, SPC approved aspects of the FY07-09 SODV schedule (See SPC Consensus 0603-29 and **Figure OTF-2** below). SPC recognized that this schedule would be subject to change based upon further examination of transit/weather windows, SODV shipyard location, and the actual start of SODV Operations.

SPC Consensus 0603-29: The SPC approves the revised FY2007-09 operations schedule of the U.S. scientific ocean drilling vessel (SODV) as proposed in Model 1b of the Operations Task Force (OTF). The recommended expeditions would begin in August 2007 and proceed through March 2009 as follows:

- Equatorial Pacific Paleogene Transect I (Proposal 626-Full2)
- Costa Rica Seismogenesis Project Stage 1 (Proposal 537A-Full5)
- NanTroSEIZE Stage 1 (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- NanTroSEIZE Stage 1 continued (Proposals 603A-Full2, 603B-Full2, 603C-Full)
- Bering Sea Paleooceanography (Proposal 477-Full5)
- Juan de Fuca Flank Hydrogeology III (Proposal 545-Full3)
- Equatorial Pacific Paleogene Transect II (mini expedition, Proposal 626-Full2)
- Canterbury Basin (Proposal 600-Full)
- Wilkes Land Margin (Proposals 482-Full3, 638-APL2)

The SPC recognizes this scenario as a preferred model subject to significant change, especially pending further knowledge about the actual SODV drydock location and starting date for IODP operations. The committee thus encourages the OTF to explore further possibilities of revising the FY2007-09 operations schedule before the August 2006 SPC meeting.

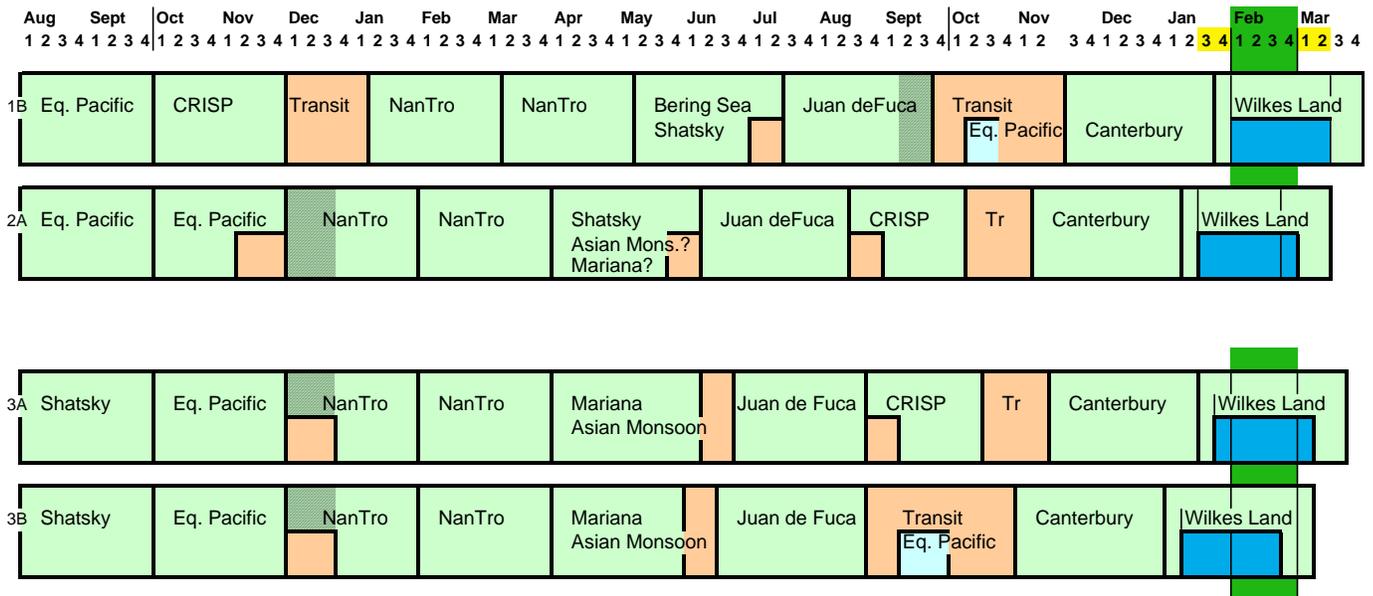


Figure OTF-2: Schedules examined at the March 2006 SPC meeting. Model 1b was the preferred option, with SPC recognizing that significant changes could occur as more details became available regarding the actual SODV dry dock location and starting date for IODP operations.

2.2.3. MSP Operations

As of the start of the June 2006 Operations Task Force meeting, no program had been selected for FY08 MSP operations. Several proposals had been discussed as potential candidates at previous meetings, including New South Pacific Sea Level (519-Full2), portions of Canterbury Basin (600-Full) and England Shelf Hydrogeology (637-Full2), although the latter was not officially at the OTF until forwarded by the SPC at its March 2006 meeting.

2.2.4. March SPC approved scheduled

Figure OTF-3 below shows graphically the vessel schedules as of the March, 2006 SPC. This schedule provided the basis for discussion and schedule revisions at the June OTF meeting.

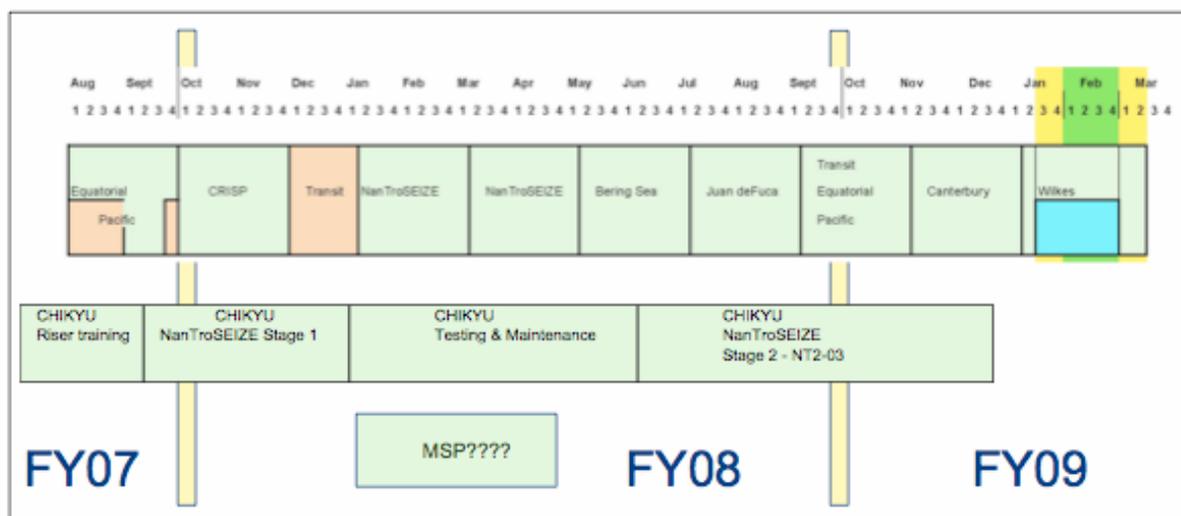


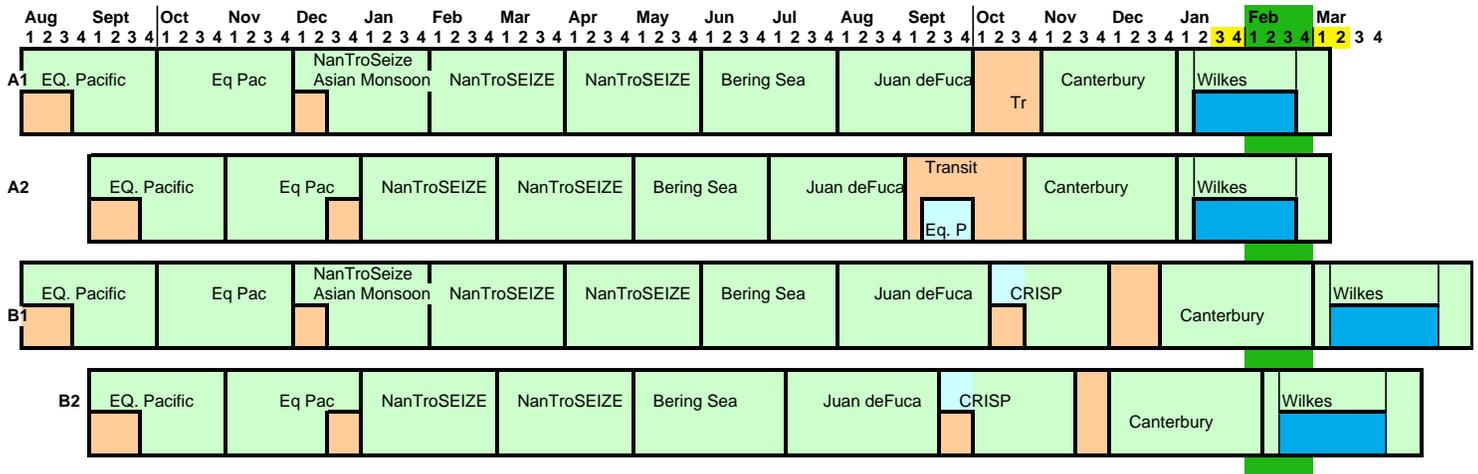
Figure OTF-3: Vessel schedule as of March 2006 SPC meeting.

2.3. Post March 2006 SPC meeting SODV Considerations

Following the March 2006 SPC meeting, the USIO re-examined the proposed SODV operations in light of more in-depth considerations of start dates, lead time issues, FY07 budgets, weather windows, transits, staffing, etc. Two new options resulted from this re-examination (**Figure OTF-4; below**)

The revised options (and “late start” variants) shown below include (A) completing a full Equatorial Pacific Program -- 58 operating days at the expense of CRISP or (B) starting CRISP and having a reduced Equatorial Pacific). These options were slightly different than what was presented at the March 2006 SPC meeting in that CRISP is only an option in one of the models (B1 and its “late start” variant B2). This change was made as starting CRISP in early FY08 (as

shown in Figure OTF-3, above) had severe lead-time and budget implications for FY07 (e.g., casing costs). In addition, as discussed at SPC, there could be difficulty in staffing CRISP and NanTroSEIZE as back-to-back operations.



OTF Figure 4: Post-March 2006 SPC schedule options generated by USIO for discussion by OTF prior to the June 2006 OTF meeting. These models (each with a “late start” variant) take into account more detailed logistical considerations that were not available at the March SPC meeting.

Appendix A of this report provides detailed assumptions/issues/rationale for these models. Note that while Model B1 appears to satisfy requirements for a full Equatorial Pacific and starting the CRISP program, it cannot work logistically because it moves the Wilkes Land into the wrong weather window. It is presented to show that only a "late start" version of this model works logistically. In addition, SPC inquired about the possibility of splitting Canterbury into two expeditions surrounding Wilkes Land. The option was not included in these revised models as it would put the SODV back into the Pacific following the Southern Ocean expeditions. This action would result in a significant transit penalty to get the SODV into the Indian Ocean in 2009 following the second portion of the split Canterbury program (per **SPC Motion 0510-23** “..... the committee intends to schedule further non-riser drilling operations in the Southern Ocean (i.e., Proposals 600-Full Canterbury Basin and 482-Full3 Wilkes Land Margin) and the Indian Ocean in the following fiscal year”).

In order to help the USIO refine these models even further prior to the June 2006 OTF meeting, SPC members on OTF were asked for input on several critical science issues:

First, is starting CRISP a higher priority than completing equatorial Pacific?

Second, is starting Asian Monsoon a higher priority than providing additional time to NanTroSEIZE?

Finally, if model B (i.e., starting CRISP) is preferred, a number of options are possible to move Wilkes into a proper weather window:

- Depending on time available, can OTF consider a reduced CRISP program (e.g., CRISP w/ LWD only, or CRISP with LWD and reference sites only) instead of the full proposal.

- Should we consider splitting Canterbury? As noted above this would move the SODV back into the Pacific and thus impose a significant transit penalty should we want to go to the Indian Ocean in FY09.

The outcome of this discussion was the SPC-OTF members felt that it was more important to fulfill the Equatorial Pacific objectives (or at least complete a large majority of the eight proposed sites, as opposed to doing ~half the sites) then to make a major start at CRISP. The general preference was to complete a program in an integrated fashion rather than leave parts to be finished up at some unspecified time in the future.

SPC-OTF members also felt that if the SODV became available August 207 (and time allowed for a model like “A1”) they would prefer to conduct Asian Monsoon operations rather than add another NanTroSEIZE expedition. SPC-OTF members felt that adding another NanTroSEIZE expedition (that would start into Stage 2 operations) would generate even more staffing-related issues and, more importantly, they thought it was a better idea to digest Stage 1 data before advancing immediately into more Stage 2 operations (a sentiment also felt by the NanTroSEIZE Project Management Team).

Finally, SPC-OTF members felt that conducting reduced elements of CRISP was acceptable but that splitting Canterbury was not a preferred option. The prevailing sentiment was that high priority programs in the Indian Ocean (and potentially the Atlantic) should be weighed against a return to the Pacific (per the Kyoto **SPC Motion 0510-23**).

The above information was thus used as a background for discussion of FY08 schedules at the June, 2006 OTF meeting.

2.4. June 2006 OTF meeting

2.4.1. SODV Schedule

The USIO presented its most recent plan for the SODV schedule:

Engineering Design Phase	Dec 05 - Apr 06
Shipyard Solicitation	Apr 06 - May 06
Review Shipyard Proposals	June 06 - Aug 06
Ship Arrives, Tanks Cleaned	Nov 06 - Nov 06
Ship in shipyard	Nov 06 - Sept 07
Dock Trials, Inclining, Completion	Oct 07 - Oct 07
IODP Operations	Nov 07

Of particular importance to OTF was the fact that the vessel delivery is now scheduled for November 2007 instead of August 2007. The vessel schedule will need to be fine-tuned in

September 2006 when a shipyard is determined and again in the spring of 2007 (about 5-6 months prior to completion of the vessel modifications).

Based upon the March SPC-approved SODV schedule and the discussion presented above in Section 1.3, the USIO presented two new model options for OTF consideration (**Figure OTF-5**; below). **Figure OTF-5** shows the SODV schedule approved at the March SPC (uppermost model in figure) and two potential models for consideration (lower two models “A” and “B”).

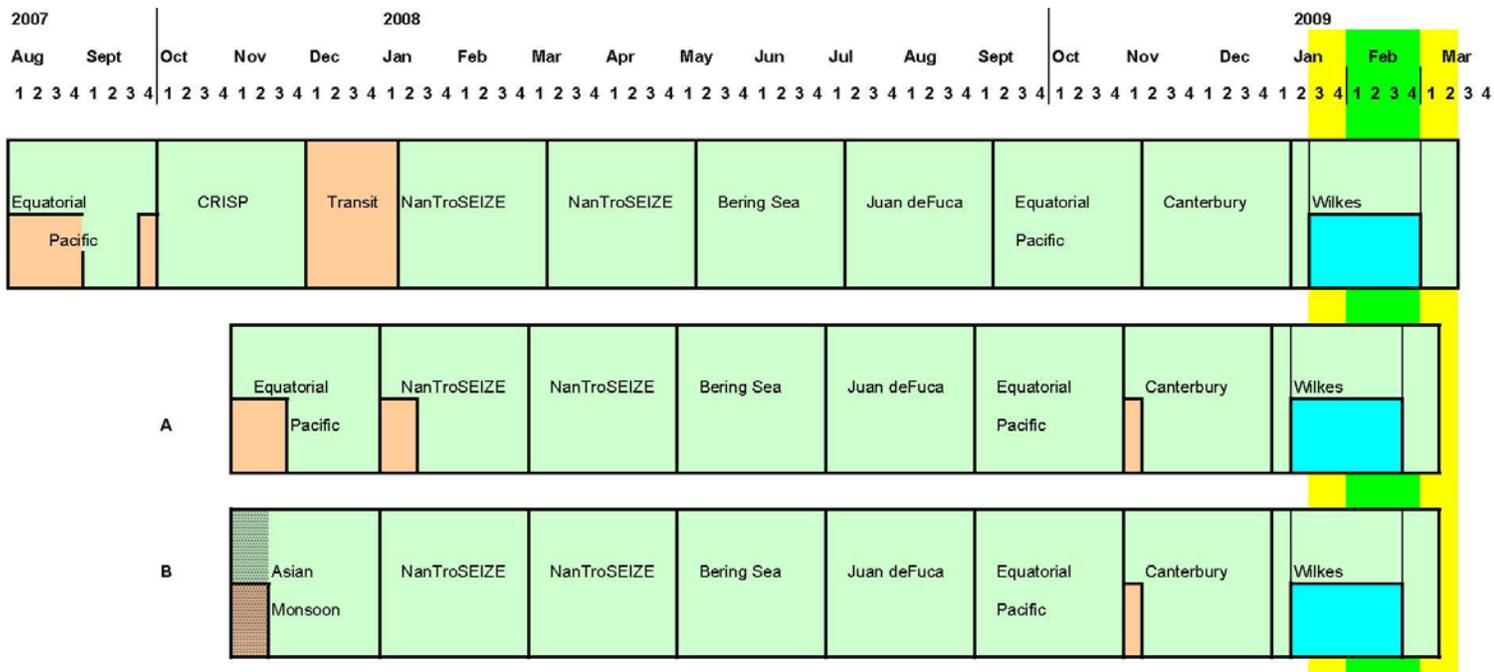


Figure OTF-5. FY08 SODV model options presented by the USIO at the June 2006 OTF meeting. The uppermost model shows approved option resulting from the March 2006 SPC meeting. The revised models differ from those presented at the March 2006 SPC as they take into account more detailed logistical information that was not available in March 2006. These new models take into account a revised start date for the SODV (Nov 2007) and input from SPC-OTF members regarding prioritization of several expeditions (i.e. Equatorial Pacific, CRISP, Asian Monsoon).

2.4.1.1 SODV Schedule Adjustment Discussion

The new model options presented by the USIO at the OTF meeting assume the first SODV expedition will commence at a Singapore shipyard in November 2007 (*Note: this assumption of a Singapore shipyard is only for model comparisons---the actual shipyard location may change; The fact that the first expedition operations will begin at the shipyard will not change*). Starting the actual expedition operations from the shipyard (no matter which one) rather than from a standard port call will result in a significant (2-3 weeks) reduction in operational time for the first expedition. The combination of a November 2007 start date, the inclusion of a “simple” (i.e., paleoceanographic expedition) as the first SODV expedition, the distinct and fixed weather windows for Wilkes, Bering Sea, and Juan de Fuca, and the desire to finish as much Equatorial

Pacific operations as possible precludes the scheduling of CRISP in these models. Note that both models “A” and “B” have transit (~9 days) included in the Canterbury operation to move the ship from the Equatorial Pacific to the Canterbury Basin.

Model A/B discussion

Model “A” (called the Equatorial Pacific model in further discussion) begins with a “simple” program (an OTF and USIO preference) and provides for a completion of the entire Equatorial Pacific program by the start of FY09. An additional benefit of this model is that it can easily accommodate an Atlantic or Pacific shipyard, utilizing Honolulu or Balboa as initial ports to pick up the scientific staff.

A negative aspect of this model is that it has ~30 more days of transit as compared to Model “B” (called Asian Monsoon model in further discussion). This increased transit may require that one of the riserless SODV Stage 1 NanTroSEIZE sites be eliminated from the SODV program (although *Chikyu* may be able to drill this site –see discussion below in Section 1.6). In addition, the first Equatorial Pacific expedition would require the USIO to receive an exemption from the Passenger Act (as it will pick up and drop off scientists in Honolulu). This act requires non US-flagged vessels to first land at a non-US port after leaving a US port. While it is possible to get this exemption, it is a risk to be considered at this time.

The Asian Monsoon Model also begins with a “simple” expedition but has the added benefit of having ~30 less transit than the Equatorial Pacific model (and thus more “science” days). The model also allows for all of the US Stage 1 NanTroSEIZE operations to be completed.

On the negative side, clearances will be required from Japan, Russia, and Korea for the Asian Monsoon expedition. Weather windows are also a major issue for the Asian Monsoon expedition, with the potential for significant lost operational time. Finally, if the Asian Monsoon model is selected it implies that the Equatorial Pacific program would not be finished before FY09. The SODV FY09/10 schedule would need to include a return to the Pacific if finishing this program is a high priority.

The OTF thought the Asian Monsoon model would be able to accommodate a 2-3 week slide in SODV shipyard schedule with the elimination of a few sites from this program. However, input from one of the lead proponents (contacted during the OTF meeting) suggested that the science of the program would be severely decimated if any of the sites were eliminated.

This fact, combined with the high probability of losing sites because of weather and shipyard delays, led the OTF to a **preference for the Equatorial Pacific model**.

Other Programs to insert in the Proposed Models?

OTF discussed potential inclusion of several other programs into the schedule:

CRISP

As discussed above neither model includes CRISP in the FY08/early FY09. Inclusion of CRISP into the program has several drawbacks including a significant transit penalty to begin the NanTroSEIZE operations, potential staffing issues, and long-lead acquisitions (i.e., casing) that cannot be accommodated in the FY07 budget.

Return to Site 1256D

At its March 2006 meeting, SPC registered a consensus that asked the USIO to assess the casing requirements for deepening Hole 1256D and to complete this study in time for the Mission Moho workshop in September 2007 (**SPC Consensus 0603-19**).

SPC Consensus 0603-19: The SPC recognizes the value of Hole 1256D as a potential site for drilling through the ocean crust. The committee requests that the USIO identify the operational requirements (i.e., casing plan) for further drilling in Hole 1256D and make that information available before the Mission Moho workshop planned for September 2006. The proponents of Proposal 522-Full3 Superfast Spreading Crust should present their plans for deepening Hole 1256D at the workshop and then submit an addendum if they believe that their original objectives remain unachieved, otherwise they should submit a new proposal.

Instead of waiting for the October 1, 2007 deadline as implied in above consensus, the proponents submitted a proposal (522-Full4 for April 1, 2007 deadline) for just one more expedition to drill 500 m deeper to fully achieve 522 objectives. In response, SSEP asked for another revised proposal that better justifies the benefits of the requested ~500 m additional penetration in terms of resolving magma chamber processes. They also emphasized that the revised proposal should take into account any discussion and recommendations deriving from the September Mission Moho workshop.

Based upon this information, OTF thought it prudent to await for additional discussion from the Moho Workshop as well as a revised proposal submission and not to schedule any return to Hole 1256D in FY08. Based upon input from Mission Moho, SSEP and SPC responses from a potential revised proposal submission in October 2007, and SPC recommendations for an SODV shiptrack in FY09/FY10 (*see discussion below in Section 2 of this report*), a return to Hole 1256D could be inserted into a FY09 or FY10 schedule.

Cascadia

OTF considered inserting Cascadia into the program instead of Bering Sea (similar weather windows). However, this change would result in three SODV CORK expeditions in a row (NanTroSEIZE, Cascadia, Juan de Fuca). The budgets would be too extensive and USIO personnel too limited to deliver three “complex” programs such as these in one Fiscal Year. In addition, Cascadia would require a long transit after NanTroSEIZE and thus a loss of “Science” days, whereas conducting Bering Sea operations in this time slot allows for science to be conducted as the ship moves across the Pacific after NanTroSEIZE.

Marianna

Similarly, the OTF also considered inserting Marianna for Bering Sea. Again the transit penalty to Juan de Fuca is significant. OTF felt that it would be more logistically feasible to insert Marianna later in the program (e.g., FY09/10 ---see Section 2 below)

Adelie APL

SPC had forward the Adelie Drift APL to OTF for consideration.

SPC Consensus 0603-23: The SPC forwards Proposal 638-APL2 Adelie Drift to the Operations Task Force (OTF) for potential scheduling

SPC recognized the need to prioritize the objectives of Proposal 482-Full3 with those of the APL. The proponents of the proposal and APL were requested to prioritize the full proposal sites with that of the APL. No response was received by the OTF meeting and thus no further action could be taken at this OTF meeting with respect to this question

The question arose as to whether the APL could be accommodated with the standard 61-day expedition framework or if additional days could be added. The USIO was asked about the possibility of extending the expedition to accommodate the APL (instead of reducing the number of the Full proposal sites). As the ship does not transit to the Southern Ocean very often many OTF members felt the USIO should investigate this possibility with the ship operators. The USIO agreed to conduct such an investigation and report back to the OTF later this summer.

Additional SODV Risks/Considerations to be addressed by OTF over the next few months

Safety Concerns

The Canterbury Basin program has shallow gas issues that must be addressed before the program can be firmly scheduled. The full proposal plus addendum includes three main sites (CB-1, -2, -3 with their alternates) in water depths under 200 m, for which the shallow-water guidelines would mandate a full gas hazard survey by rule. It also still includes two main sites in 200-400 m water depth with very deep penetrations, for which safe operations might also mandate a full gas hazard survey. The hazard assessment of the scientific survey won't be completed and presented until the winter 2006 EPSP meeting.

NOTE: Keir Becker has formed a small SPC working group to address the scientific merit of several operational permutations to the Canterbury Program. This report will be forwarded in mid-August to the USIO and OTF so they can explore potential options depending on the outcome of the hazard assessment.

Budgets

FY08 budget targets not identified. Thus it not possible to say with certainty that all the elements of the OTF preferred SODV model can be accommodated within the budget.

NanTroSEIZE Site Reduction

The Selection of Model A (Equatorial Pacific) by OTF as its preferred model means that the SODV may not be able to drill both the NanTroSEIZE Stage 1 reference sites. There is a possibility that *Chikyu* could drill one of these sites in FY08 (see *Chikyu* schedule below). Until shipyard decisions and starting schedules are finalized this issue will remain unresolved (but the USIO will continue planning for drilling both reference sites).

Shipyard decision

Many issues and unknowns surrounding the SODV schedule cannot be settled until the shipyard selection process is finalized (e.g., port for initial expedition, start date, reduction in first Equatorial Pacific drilling program? Etc.).

The USIO will develop a decision tree this summer that will be utilized for determining when options/issues can be finalized or removed from consideration. Major decision points will occur this fall (Shipyard finalized) and winter (Canterbury Hazard review at EPSP) and final adjustments to the FY08 schedule could be made and approved at the March 2007 SPC meeting.

2.4.2. MSP FY08 Schedule

Currently, the only viable FY08 MSP program at OTF for consideration is the Great Barrier Reef component of the South Pacific Sea Level Program. This program has not previously been scheduled due to a lack of site surveys. The OTF was informed that some site surveys had been conducted this year and more were to be conducted in mid 2007. Whether this timing would be sufficient for EPSP review at its next meeting (January, 2008) is unknown. If EPSP could review (and approve) the sites at its next meeting, the proposed operations would most likely span the F08/089 boundary. However the funding would be considered FY08 funding so there would be funds for an FY09 MSP operation.

2.4.3. Chikyu FY08 Schedule

Figure OTF-6 (below) shows the FY08 operations proposed by CDEX for *Chikyu*.

(NOTE added in proof: See Appendix C for more recent (minor) changes suggested by CDEX and awaiting approval by the NanTroSEIZE Project Management Team with respect to FY08 Chikyu operations)

The Stage 2 Riser operations at NT2-03 had previously been approved by the OTF and SPC (see **Section 1.3.1** above). The new element added at the OTF meeting is the potential for operations in January and February of 2008. CDEX proposed to conduct some of the preparatory NT2-03 riser operations during this time period (i.e., installing seabed hardware and some casing strings). The OTF agreed that this would be one option to forward to SPC. A second option would include the riserless drilling of one of the NanTroSEIZE Stage 1 reference sites should the USIO be unable to conduct operations at both sites. Or some combination of both. A decision on this issue will have to await a more definitive schedule from the USIO later this fall.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2006 (H18)				FY06			FY07			FY08		
				Maintenance	Crew Training	Modification	Shimokita Shake Down	ODS				
2007 (H19) FY07 1.0M				FY07			FY08			FY09		
				ODS					NanTroSEIZE Exp.1 : LWD	Exp.2 : NT2-03	Exp.3 : NT1-03 & NT2-01	
2008 (H20) FY08 9.0M				FY08			FY09			FY10		
				NanTroSEIZE Exp.4 : NT2-03 Riser 1st	1st Inspection & Maintenance		NanTroSEIZE Exp. 4 : NT2-03 Riser 2nd			*No LTMS instalation		
	Exp.3' : NT1-01											

Figure OTF-6: Proposed FY08 (Oct 2007- Sept 2008) options for *Chikyu*. The major difference between this model and that seen approved previously by SPC in March 2006 is the inclusion of 2 months of new time for riser hole preparations at NT2-03.

2.4.4. Summary FY07/08 Schedules

Figure OTF-7 (below) graphically summarizes the proposed operational plan for FY08 and early FY09 as of the June 2006 OTF meeting.

(NOTE added in proof: See Appendix C for more recent (minor) changes suggested by CDEX and awaiting approval by the NanTroSEIZE Project Management Team with respect to FY08 Chikyū operations).

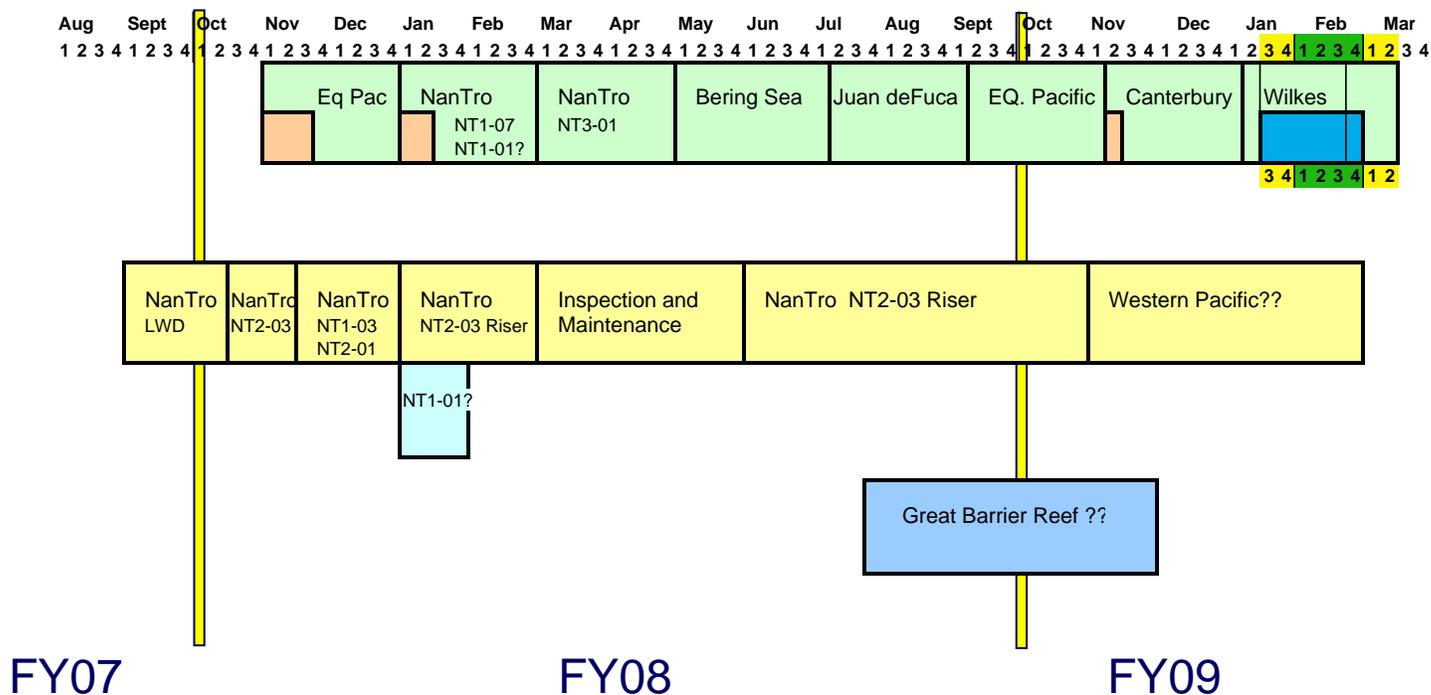


Figure OTF-7: Graphical summary of proposed FY08 IODP operations plan. The upper (green) model represents proposed SODV operations, the middle (yellow) model represents the Chikyū schedule and the lower model (blue) is a potential option for MSP operations. Note that one of the reference sites currently proposed for the first SODV NanTroSEIZE expedition may have to be drilled by Chikyū at the start of it riser preparation.

3. Potential FY09/FY10 Schedules

In an effort to insure enough lead time to properly plan expeditions, the OTF examined a number of scenarios for FY09 (and early FY10), especially for the SODV and Chikyū.

Following the SODV excursion into the Southern Ocean in early FY09, SODV operations could either move to the Indian Ocean (per the Kyoto **SPC Motion 0510-23**) to conduct some combination of operations at Murray Ridge, Indus Fan and/or Bengal Fan or the SODV could move directly back into the Pacific Ocean to address highly ranked proposals such as Mariana, CRISP, Asian Monsoon, and Cascadia.

Chikyu FY09 operations could include some western Pacific riserless programs (e.g., Asian Monsoon) and then move into the Indian Ocean to conduct operations at Murray Ridge. (Murray Ridge operations could be a conducted collaboratively by the SODV and *Chikyu* or totally by *Chikyu*)

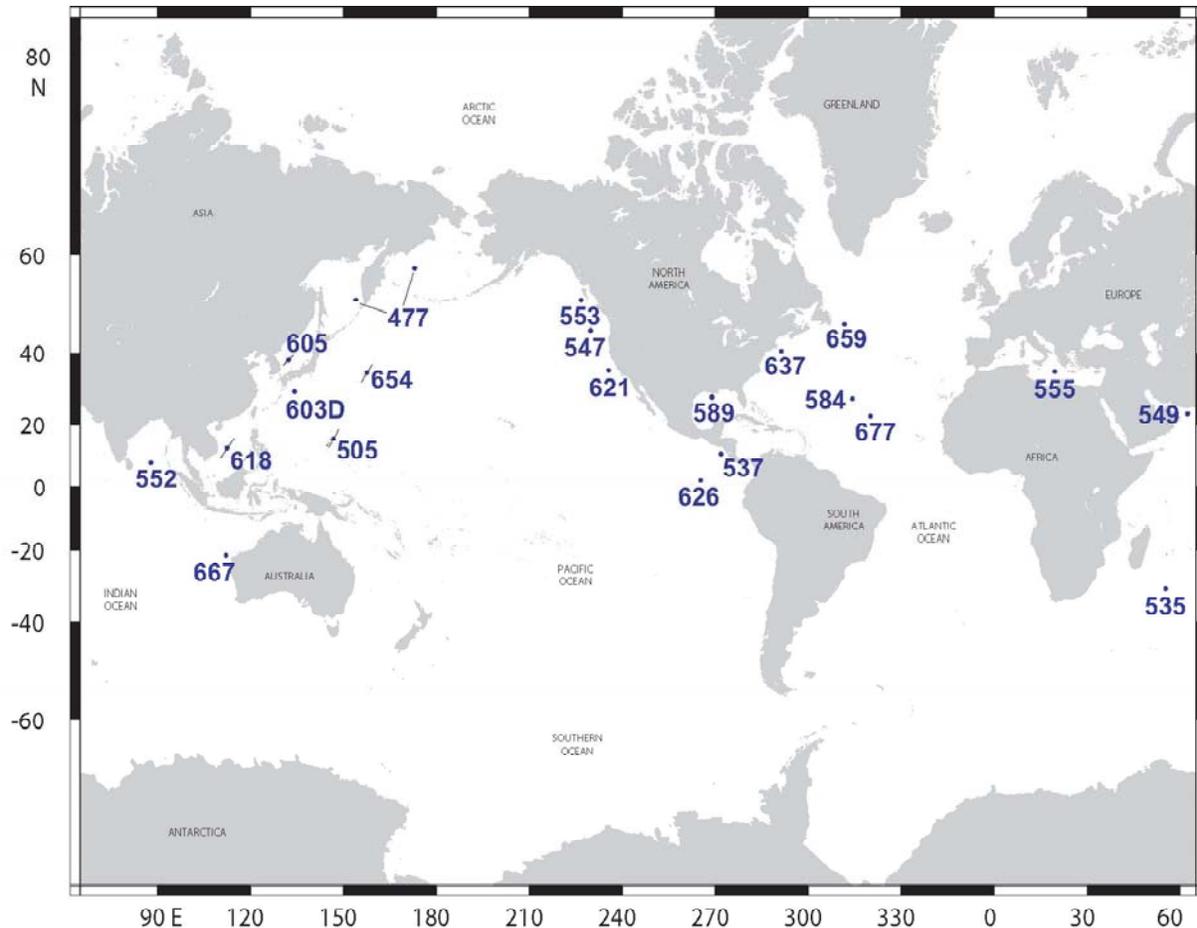


Figure OTF-8 --- Possible FY09/10 IODP operational areas based upon proposals still residing with OTF after most likely FY08 operations are completed (includes proposals residing in “SPC holding bin” due to lack of site surveys).

3.1. Possible FY09/FY10 Scenarios for SODV

The OTF developed a number of FY09/10 scenarios for the USIO to investigate and determine the first-level feasibility prior to the August SPC meeting. The scenarios presented below are merely starting points for discussion as to potential ship tracks. They do not take into account weather windows, transits, clearance issues, site survey needs and all programs may not currently reside at OTF (i.e., some may reside in the “SPC Holding Bin”).

Once the first level feasibility is conducted by the USIO (i.e., weather windows, rough transits, etc) the OTF would request SPC to identify the areas of operation preferred for FY09/10 based

upon the maximum return of science. This information would assist the USIO, OTF, IODP-MI and the Lead Agencies in planning for FY09/10 budgets and lead-time issues.

The first two scenarios presented below build upon the SPC motion at Kyoto (**SPC Motion 0510-23**) to move into Indian Ocean. The committee stated: “..... *the committee intends to schedule further non-riser drilling operations in the Southern Ocean (i.e., Proposals 600-Full Canterbury Basin and 482-Full3 Wilkes Land Margin) and the Indian Ocean in the following fiscal year*”. The main difference in these two scenarios is that after Indian Ocean operations the SODV would move into either the Atlantic or Pacific depending on SPC science priorities (and if enough proposals are present at OTF to justify the scenario).

NOTE: The scenarios presented below are potential operations only...they do not imply a sequential order or that all operations could be conducted (i.e., weather windows, transits, operational times have not been looked at in detail as of the June 2006 OTF meeting).

Scenario 1 -- Indian Ocean – Atlantic Ocean

667 NW Australia
552 Bengal Fan
549 Arabian Sea
555 Cretan
677 Mid Atlantic Bio
626 Equatorial Pacific (if not finished)
537 CRISP

Scenarios 2 -- Indian Ocean – Pacific Ocean

667 NW Australia
552 Bengal Fan
549 Arabian Sea
505 Marianna
626 Equatorial Pacific (if not finished)
537 CRISP

The next two scenarios have the SODV moving directly back into the Pacific following Wilkes Land operations in order to finish highly ranked science programs such as Cascadia, NanTroSEIZE Stage 2 riserless drilling, Equatorial Pacific, Sea of Okhostk, and CRISP.

Scenario 3 -- Pacific Ocean “clockwise”

505 Marianna
477 Sea Okhostk or 645 Shatsky or 603 NanTroSEIZE
553 Cascadia
626 Equatorial Pacific (if not finished)
537 CRISP

Scenario 4 -- Pacific Ocean straight to Equatorial Pacific /CRISP

626 Equatorial Pacific (if not finished)
537 CRISP
553 Cascadia
645 Shatsky

3.2. Possible FY09/FY10 Scenarios for *Chikyu*

Two main options are presented for FY09/10 *Chikyu* operations. The first scenario is to remain in the NanTroSEIZE area and continue with Stage 2 operations and start some Stage 3 operations (Riser Operations at NT3-01). However, the prevailing sentiment among the NanTroSEIZE Project Management Team and the OTF is that it would be wise to stop NanTroSEIZE operations for a year and allow the scientists involved in that program time to evaluate the Stage 1 and Stage 2 results before proceeding directly into Stage 3.

Given this fact, and the SPC motion (**SPC Motion 0510-23**) to move into the Indian Ocean in FY09/10, CDEX presented a scenario for moving the *Chikyu* through the Western Pacific into the Indian Ocean (**Figure OTF-9; below**). The Asian Monsoon program could be considered a potential FY09 operation with possibly 3-4 months of additional time available for other Western Pacific operations (dependent on the available pool of programs at OTF in June 2007).

Following these Western Pacific operations the *Chikyu* could move into the Indian Ocean to conduct the Murray Ridge program either collaboratively with the SODV or independently.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2008 (H20) FY08 9.0M	NanTroSEIZE Exp.4 : NT2-03 Riser 1st			1st Inspection & Maintenance		NanTroSEIZE Exp. 4 : NT2-03 Riser 2nd			*No LTMS instalation			
	Exp.3' : NT1-01											
2009 (H21) FY09 11.0M	Western Pacific			Asian Monsoon : 605			Indian Ocean					
2010 (H21) FY10 10.0M			Maintenance		NT2-03 LTMS instalation		NanTroSEIZE : NT3-01 Riser					

Figure OTF-9. Potential FY09 and FY10 operational areas for *Chikyu*. Following NT2-03 riser drilling in FY08, *Chikyu* could move thru the western Pacific addressing some highly ranked science programs before moving to the Indian Ocean to drill Murray Ridge.

3.3. Possible FY09/FY10 Scenarios for MSP operations

The most viable MSP operation following completion of New Jersey Shallow Shelf and the Great Barrier Reef programs is New England Hydrogeology. However, this program is in the “SPC Holding Bin” as it is in need of site surveys. The status of those surveys is uncertain at this time. OTF, however, determined that this proposal could benefit from limited scoping activities to resolve technical issues and possibly guide the site survey proponents in designing surveys.

Should other MSP programs rise through the SAS system and be forwarded to OTF, they could be evaluated at the June 2007 OTF meeting.

4. Assessment of Proposals at OTF not Scheduled for FY07/08/09

More proposals reside at the OTF than can feasibly be scheduled in FY08/09. This large pool, however, provides OTF with the ability to put together the most logistically and financially feasible program for SPC to consider. There remains the possibility, though, that programs may remain at OTF for several years and the science may become dated. Thus, SPC has asked OTF to give an assessment of the likelihood when proposals not part of the next Fiscal Year program will be scheduled.

OTF determined that depending on the scenario(s)/ ship tracks chosen for FY09/10 that most of the high priority Group1 proposals residing at OTF could either be finished, in progress, or scheduled. The ones not scheduled will obviously depend on the shiptrack chosen by SPC in August 2006 for the SODV in FY09/10. A more complete assessment can follow this August 2006 SPC meeting.

5. Scoping Recommendations

The OTF recommended that scoping begin for the Indian Ocean programs. In particular, OTF recommended that IODP-MI work with CDEX, the USIO and a small group of proponents from the Indian Ocean expeditions under consideration to determine whether a collaborative or independent platform approach for Indian Ocean operations (particularly Murray Ridge) should be utilized.

The OTF recommended that scoping process for CRISP wait until the ship track for FY09/10 is better determined. Depending on the ship track chosen (and thus when CRISP might begin and what time would be available for operations) the scoping group will then be in a position to better assess the time available and the potential approaches to be taken for the initial CRISP operations.

New England Hydrogeology: See Section 2.3. Scoping recommended for this program.

6. Core Distribution

6.1. FY08 Recommendations

The OTF is charged with recommending the appropriate core repository for the storage of cores collected from each scheduled expedition. Appendix B contains the guidelines for the geographic core distribution recommended by the Science Advisory Structure. Based upon this recommended geographic distribution pattern the following repositories are designated:

- NanTroSEIZE => Kochi Core Center
- Bering Sea => Kochi Core Center
- Juan de Fuca => Gulf Coast Repository
- Equatorial Pacific => Gulf Coast Repository
- Great Barrier Reef => Kochi Core Center
- Canterbury => Kochi Core Center
- Wilkes Land => Gulf Coast Repository

6.2. Legacy Core - issues with geographic boundaries

The ODP/DSDP Core redistribution project will distribute cores according to the same geographical framework as that used for the IODP cores. However, some DSDP and ODP legs have sites that reside on both sides of a geographic boundary (see spreadsheet in **Appendix B**). The question arose as to how the cores from these sites should be distributed. Should they be distributed according to the geographical region that was designated by SAS or should they be group together as a Leg despite being in different geographic regions?

OTF discussed the issue and recommended that these decisions should be made on a case-by-case by IODP-MI in consultation with the repository curators. The overriding principles for making the decisions should be (1) move less core to more core (i.e., to minimize number of cores moved) and (2) examine the lithology of the sites and the science surrounding the particular leg and group the cores accordingly.

IODP-MI will work with the repository personnel to distribute the cores in question utilizing these principles.

7. Site Naming Conventions

The multi-platform nature of IODP may result in some nomenclature confusion when the same holes or sites are drilled by different platforms. OTF was asked for their input on resolving some of these nomenclature issues as well as how to actually define a new site.

7.1. How to define new sites?

The DSPD, ODP, and phase 1 IODP model for determining site status was based upon the ship being in range of same beacon. If not in range, a new site was designated rather than a new hole at same site. However, this beacon designation model is water-depth dependent. The greater the water depth, the greater the horizontal distance that would be required to define a new site.

The OTF chair proposed that rather than using this water-depth dependent, beacon-based model, site designation should be based upon actual horizontal lateral offset (GPS defined). The OTF discussed the idea and decided that a horizontal offset of 300 meters is a good guideline for designating a new site.

However, to retain some flexibility in the system for unusual cases, it was deemed that this offset distance of 300 m was only a guideline. If an expedition deemed it necessary to change this

distance for science or logistical reasons, the rationale should be detailed explicitly in the expedition prospectus.

7.2. Naming conventions.

Several scenarios for site naming conventions were discussed by OTF and recommendations given on how to best address the issues.

Site scenario #1. Multiple holes drilled at the same site by multiple platforms.

For example, the *Chikyu* first conducts LWD operations at one site and the SODV drills/cores additional holes at the same site. Do all holes get labeled with “J” designation (e.g., J1405A, J1405B, J1405C, etc). Or does the first hole (drilled by Chikyu) get labeled J1405A and the remaining SODV holes get labeled U1405B, U1405C, U1405D, U1405E, etc?

The OTF recommended that all subsequent holes at a site use the initial letter designation.

Site Scenario #2: IODP sites (one hole only) reoccupied by multiple platforms.

For example, the SODV drills a hole to a specified depth and then, a later time, the Chikyu reoccupies and deepens the same hole. What do we call the deeper part of hole? Is the upper portion labeled U1405A and the lower portion J1405A? Or does the entire hole get labeled U1405A (i.e., the label of first platform to drill the hole)

The OTF recommended that the entire hole should retain the hole/site designation established by the first platform.

8. Next OTF meeting:

The OTF decided the next meeting (if needed) would only be a short ad-hoc meeting before or during the August SPC meeting to address any issues resulting from the SPC approval process for the FY08 schedule. The next full OTF meeting would be June 2007 to address finalizing the FY09 schedule.

APPENDIX A -- Assumptions for revised SODV FY08/09 models (Section 1.3.5)

Overall

1. Each model can not be implemented as proposed. They will need to be refined once the shipyard is determined. For example, you will note that Wilkes Land is not in the critical weather window and needs to be adjusted. There are several ways to do this, but one needs a start date before doing so. Given this, what one would like at present is a preferred sequence.

2. Note that there are two models A1 and B1. The two alternatives (A2 and B2) are shown to provide an example as to how one might respond to a 30 day delay in the shipyard. (Note that at present the date of 1 August is still the target delivery date for the vessel)

3. a . You will note that in B1 Wilkes occurs late and will need to occur about 1 month earlier. This can be achieved several ways. For example, delete Asian Monsoon / NanTroSEIZE, Eliminate CRISP, Split Canterbury, or possibly reduce CRISP to LWD only. These are just examples that can be explored once we have a better understanding of timing.

4. Note that the models all assume that back to back US port calls will occur. This requires a waiver from the Immigration Department. If this is successful, no problem. However, if this is not attained then a change in strategy is required. For example - The first Eq Pacific expedition is assumed to start in Singapore, scientists board in Honolulu and depart in Honolulu. The alternative is that the expedition starts in Singapore, scientists board in Tahiti and depart in Honolulu (this adds a few additional transit days). IN the second expedition the scientist board in Honolulu and would either depart Honolulu following a transit to and from Christmas Island or would depart in Yokohama/Pusan staying on for the transit from the last eq pac site.

5. One would prefer to have the Bering Sea occur in the June July window rather than the May window. This will result in some waiting on weather. April for this expedition is too early.

6. CRISP was relocated from Expedition 2 to Expedition later to (a) remove the back to back approach with NanTroSEIZE and (b) remove the need to include the casing (about \$750, 000) as a long lead item from the FY07 budget.

7. A second equatorial pacific expedition was added in place of CRISP to reduce budget requirements and to keep NanTroSEIZE in a more favorable weather window. This also allows additional time to review the LWD data collected from the CHIKYU prior to the first NanTroSEIZE riserless expedition.

8. All models start with the Singapore as the initial port of call and part of the first expedition. The actual port of call will be the actual shipyard to be determine later.

9. The significant initial issues for OTF are as follows

a) Is starting CRISP a higher priority than completing equatorial Pacific?

b) Is starting Asian Monsoon a higher priority than providing additional time to NanTroSEIZE?

c) If model B is preferred should one consider CRISP LWD only, CRISP with LWD and reference sites, a split of Canterbury, or other?

Specific assumptions

Model A1

*Equatorial Pacific starts at the shipyard (assume Singapore) - provides about 18 operating days (site and transit between sites) Equatorial Pacific 1 & 2 provides an estimate of about 58 operating days

*Asian Monsoon (or NanTroSEIZE) commences in Honolulu and ends in Japan. - Provides about 36 operating days. May need to change if back to back US portcalls are not possible

*Wilkes still needs to be tuned to accommodate the best potential ice window (need to add about 2-3 weeks to the schedule prior to Wilkes, but after Juan de Fuca.

Model A2

*Assumes a 1 month delay to the vessel capability. To accommodate this the proposed Asian Monsoon /NanTroSEIZE expedition has been removed from the schedule

*Equatorial Pacific starts at the shipyard (assume Singapore) - provides about 18 operating days (site and transit between sites). Equatorial Pacific 1 & 2 provides an estimate of about 46 operating days

(Bering Sea starts in May which may result in some waiting on weather

*About 21 Operating days are added to the transit from San Diego to Wellington for equatorial Pacific operations. This provides a total of about 57 operating days for the Equatorial Pacific Program

*Wilkes still needs to be tuned to accommodate the best potential ice window (need to add about 2-3 weeks to the schedule prior to Wilkes.

Model B1

NOTE THAT THIS MODEL AS IS WILL NOT WORK WITHOUT MODIFICATION GIVEN THE WILKES TIMING. It is shown because a slight delay in the shipyard and slight modification to the expeditions could allow this model to work.

*Equatorial Pacific starts at the shipyard (assume Singapore) - provides about 18 operating days (site and transit between sites). Equatorial Pacific 1 & 2 provides an estimate of about 58 operating days

- *Asian Monsoon (or NanTroSEIZE) commences in Honolulu and ends in Japan. - Provides about 36 operating days. May need to change if back to back US portcalls are not possible
- *CRSIP is added to the schedule prior to the transit to Wellington. About 42 operating days are available
- *Wilkes still needs to be tuned to accommodate the best potential ice window (need to reduce the pre Wilkes schedule by about 30 days)

Model B2

- *Assumes a 1 month delay to the vessel capability. To accommodate this Asian Monsoon /NanTroSEIZE has been removed from the schedule
- *Equatorial Pacific starts at the shipyard (assume Singapore) - provides about 18 operating days (site and transit between sites). Equatorial Pacific 1 & 2 provides an estimate of about 46 operating days
- *Bering Sea starts in May which may result in some waiting on weather
- *CRISP is added to the schedule prior to the transit to Wellington. About 42 operating days are available
- *Wilkes still needs to be tuned to accommodate the best potential ice window (need to add about 2-3 weeks to the schedule prior to Wilkes. Wilkes still needs to be tuned to accommodate the best potential ice window (need to reduce the pre Wilkes schedule by about 14days)

APPENDIX B : Geographic distribution of IODP/ODP/DSDP cores

SPC Consensus 0406-24: The SPC recommends storing DSDP, ODP, and IODP cores in the Bremen, Gulf Coast, and Kochi core repositories based in principle on the geographic considerations presented by IODP-MI at this meeting. The SPC requests regular progress reports as IODP-MI works on the timing and fiscal details of this initiative.

SPPOC Consensus 0412-3: The SPPOC favors in principle the geographic model presented by the IODP-MI for distributing IODP, ODP, and DSDP cores among the Bremen, Gulf Coast, and Kochi core repositories. The SPPOC requests the SPC to define the geographic boundaries of the plan by the June 2005 SPPOC meeting.

SPC Consensus 0503-14: The SPC recommends that the IODP adopt the geographic-based core distribution model for IODP, ODP, and DSDP cores as presented by the IODP-MI at the December 2004 SPPOC meeting (see SPPOC Consensus 0412-3 and SPC Consensus 0406-24), except that the western Pacific boundary should extend along the Aleutian trench instead of along the eastern coast of Kamchatka. The committee further recommends an additional fundamental guideline of storing cores from the same expedition(s) in the same repository. Given that scientific and logistical concerns may occasionally justify deviating from this model, the SPC will provide guidance as appropriate on preferred repositories when forwarding proposals for the Operations Task Force to consider in developing drilling schedule scenarios.

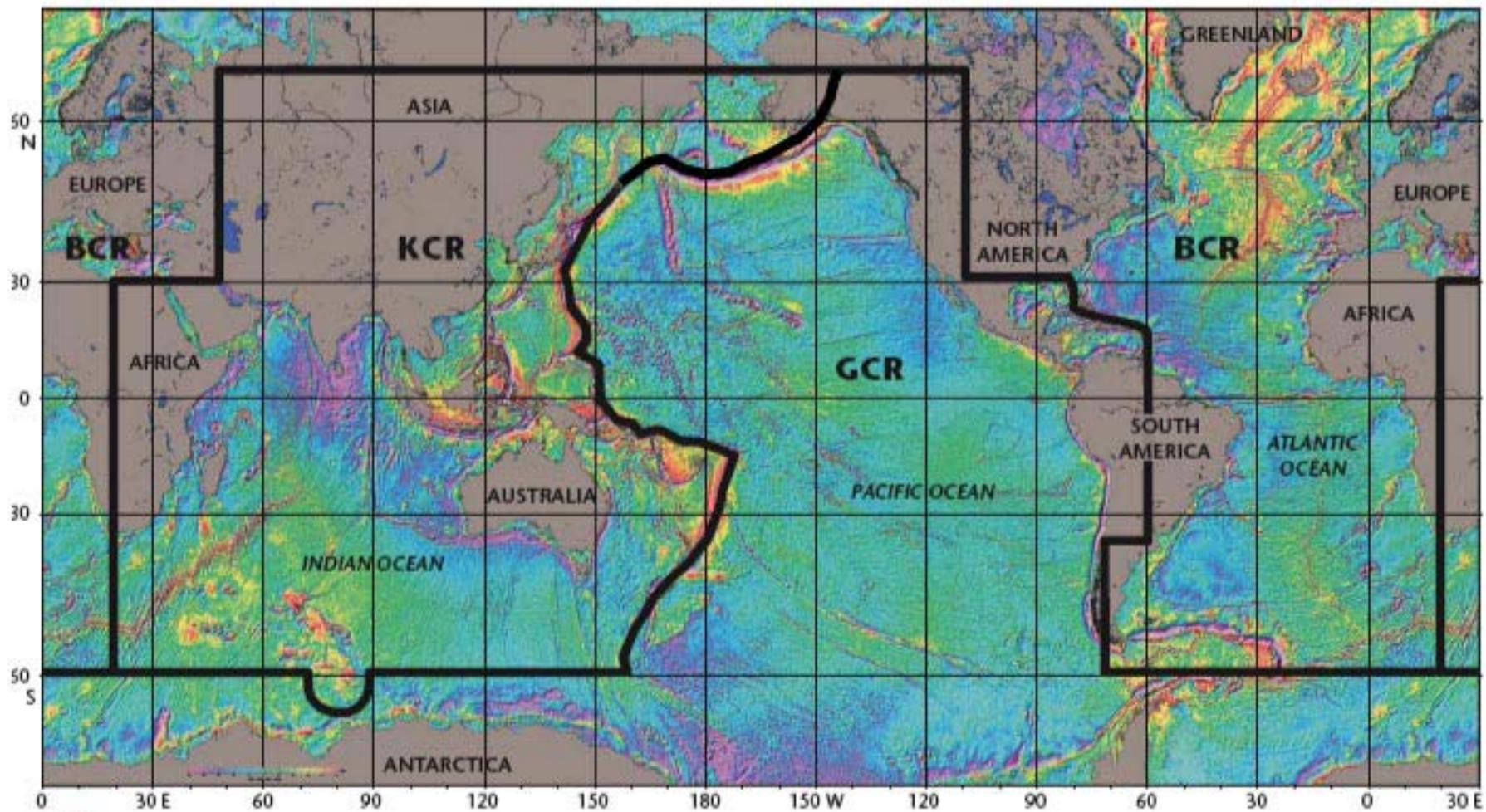
SPPOC Consensus 0506-7: The SPPOC approves the revised geographic distribution scheme for IODP, ODP, and DSDP cores, as recommended in SPC Consensus 0503-14.

Current DSDP/ODP Core Redistribution

Repository	Institution	Amount of Core/Program	Geographic Location
WCR	Scripps Institute of Oceanography, University of California, San Diego	50 km DSDP	Indian and Pacific Oceans and peripheral seas
ECR	Lamont-Doherty Earth Observatory, Columbia University	75 km DSDP & ODP	Atlantic and Southern Oceans, Gulf of Mexico, Caribbean Sea, and other peripheral seas
GCR	Texas A&M University	120 km ODP	Pacific and Indian Oceans and peripheral seas
BCR	University of Bremen	80 km ODP	Atlantic and Southern Oceans (>60°S), Gulf of Mexico, Caribbean Sea, and other peripheral seas
KCC	Kochi University	0 km	None

Proposed Core Redistribution

Repository	Institution	Amount of Core/Program	Geographic Location
GCR	Texas A&M University	106 km DSDP & ODP	Pacific (Pacific plate east of western boundary); Caribbean Sea and Gulf of Mexico; Southern Oceans (S of 60° except Kerguelan Plateau)
BCR	University of Bremen	135 km DSDP & ODP	Atlantic Ocean, Mediterranean Sea, Arctic Ocean (north of Bering Strait)
KCC	Kochi University	83 km DSDP & ODP	Pacific (west of western boundary of Pacific plate); Indian Ocean (N of 60°S), and all of Kerguelan Plateau
NJ Geological Survey	Rutgers University	0.62 km ODP Leg 150X	Land-based New Jersey and Delaware cores (to be stored with Leg 174X land cores from New Jersey)

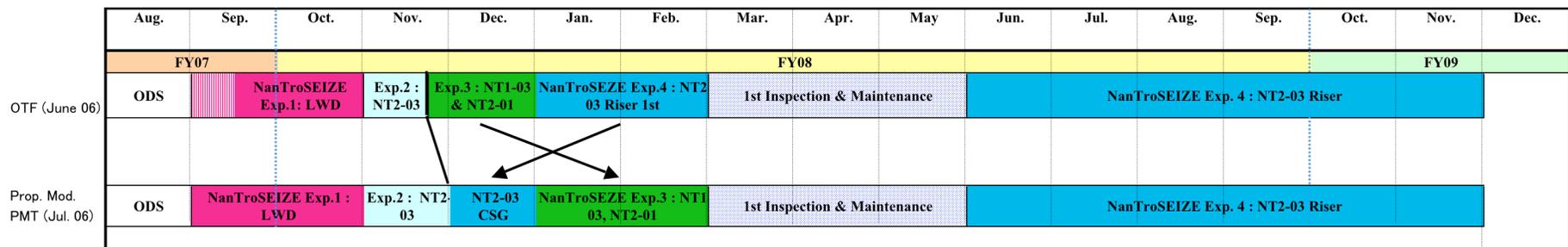


APPENDIX C: Proposed modification to June 2006 OTF Chikyu FY08 Operations plan

At the July 27-28, 2006, NanTroSEIZE Project Management Team (PMT) meeting CDEX brought forth a proposed modification to the OTF FY08 operations plan for *Chikyu* (see figure below). The “science” operations in this new model are the same as the old model. The major changes are increased contingency time for the three Stage 1 expeditions, and a change in the order of initial casing operations at NT2-03.

The upper portion of the figure below shows the operations schedule developed at the June 2006 OTF that included three NanTroSEIZE Stage 1 expeditions (LWD, NT2-03 riser pilot hole, Thrust faults) followed by two months of riser preparations at NT2-03, a three-month maintenance period, and then 6-months of full riser drilling at NT2-03.

The lower portion of the figure shows the proposed modifications to the OTF plan. These modifications include (1) increased operational time for all three NanTroSEIZE Stage 1 expeditions to include more contingency time (for weather and geologic complexity), and (2) inserting casing operations as an add-on to the NT2-03 pilot-hole drilling rather than as a separate operation following the Thrust Fault expedition.



The increased contingency time obviously is welcomed by the PMT. CDEX has proposed the changes in the initial casing plan as they feel it is more operationally feasible to conduct these casing operations (to ~ 700 m) right after drilling/coring of the NT-03 pilot

hole. The PMT consensus for this change in operations was that expanding the second expedition (NT2-03) to include setting a riser seafloor structure and 36", 26", and 20" inch casing would be OK, pending confirmation from the CDEX operations / engineering group that the appropriate geologic/geophysical/geotechnical information exists (or will exist in a timely manner) to develop a casing plan and install it right after drilling the pilot hole.

In particular, the PMT requested the following information before formally approving this modification:

- a. What data will the CDEX Operations group need (and when do they need it) to install casing? Will CDEX operations personnel have enough information (e.g., LWD, Coring, seismic) and time to properly plan for this advanced casing operation?
- b. The PMT needs to see an overall time/operations estimate for Expedition 2 science (coring) operations plus the seafloor structure / casing plan.
- c. What impact, if any, will this modification have on the science operations? How will priorities of the coring versus riser seafloor installation be determined?

Path Forward:

The initial response from CDEX has been good; the data CDEX needs appears to be in hand or nearly so. The PMT hopes to have the necessary information by the time of SPC meeting in order to recommend a course of action to OTF Chair. If the PMT can give their approval prior to the SPC meeting, the OTF Chair will be ask for SPC approval of this revised FY08 scenario at the SPC meeting. If the questions are not fully answered by the SPC meeting (but are forthcoming in the near future), the OTF Chair would ask for a provisional approval. If the PMT does not approve of the change following full disclosure of the required information, the OTF Chair would ask for approval of the original operations set forth at the June OTF meeting.