

**JOIDES SITE SURVEY PANEL MEETING**

**July 29-31, 1998**

LDEO Palisades, N.Y , USA

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**Members:** Srivastava, Shiri (*GSC Atlantic, Canada*) -- Chair  
Anselmetti, Flavio (*ESF*)  
Christeson, Gail (*UTA, USA*)  
Flood, Roger (*SUNY, USA*)  
Hine, Albert (*USF, USA*)  
Kleinrock, Martin (*VU., USA*)  
Kuramoto, Shin'Ichi (*GSJ, Japan*)  
Lyle, Mitchell (*BSU., USA*)  
Meyer, Heinrich (*BGR, Germany*)  
Paull, Charles (*UNC, USA*)  
Sibuet, Jean-Claude (*IFREMER, France*)  
Silver, Eli (*UCSC, USA*)  
Whitmarsh, Robert (*SOC, UK*)

**Liaison:** Allan, James (*NSF, USA*)  
Ball, Mahlon (*PPSP*)  
Ellins, Kathy (*JOIDES Office*)  
Hodell, David (*SCICOM/OPCOM*)  
Quoidbach, Daniel (*ODP Data Bank*)

**Alternate:** Davies, Tom (*ODP/TAMU*)

**Apology:** Bochu, Yao (*GMGS, China*)  
Diebold, John (*LDEO, USA*)  
Driscoll, Neal (*WHOI, USA*)  
Enachescu, Michael (*Husky, Canada*)  
Klaus, Adam (*ODP/TAMU*)

## AGENDA

*JOIDES Site Survey Panel Meeting  
July 29-31, 1998  
LDEO, Palisades, N.Y., USA*

### **1. PRELIMINARY MATTERS (Srivastava)**

- 1.1 Introduction of members, liaison, guests and meeting logistics.
- 1.2 Charge and procedures for the meeting, Working of SSP
- 1.3 Watchdog assignments and feedback to proponents
- 1.4 Action items from February 1998 Berlin meeting

### **2. REPORTS**

- 2.1 SCICOM/OPCOM(Hodell)
- 2.2 JOIDES (Ellins)
- 2.3 PPSP (Ball)
- 2.4 ODPDB (Quoidbach)
- 2.5 TAMU (Davies)
- 2.6 NSF (Allan)
- 2.7 ISSEP (Whitmarsh) and ESSEP (Flood)
- 2.8. OSN1 pilot experiment (Christeson)

### **3. SITE SURVEY IMPLICATIONS OF RECENTLY DRILLED LEGS**

- 3.1 Leg 178: (Davies)
- 3.2 Leg 179: (Davies/Christeson)

### **4. SITE SURVEY STATUS OF UPCOMING SCHEDULED LEGS FOR 98 & 99 \***

- 4.1 Leg 183: Kerguelen, 457 (Kuramoto)
- 4.2 Leg 184: East Asian Monsoon History (Flood) PPSP
- 4.3 Leg 186: Western Pacific Seismic Network, Japan Trench, 431A (Christeson)
- 4.4 Leg 187: Australia-Antarctica Discordance, 426 (Sibuet)
- 4.5 Leg 188: Prydz Bay Glacial History, 490 (Paull)

### **5. POTENTIAL FUTURE DRILLING: SSEP (Earth Int.)**

- 5.1 431B: Western Pacific Seismic Network (Christeson)
- 5.2 445: Nankai Trough Accretionary Prism (Paull)
- 5.3 448: Ontong Java Plateau Origin (Whitmarsh)
- 5.4 450: Taiwan arc-continent collision (Sibuet) PPSP
- 5.5 451: Tonga Forearc (Kleinrock)
- 5.6 463: Plume Impact at Shatsky Rise (Meyer)
- 5.7 479: Pacmanus Basin (Silver)
- 5.8 499: ION Equatorial (Christeson)
- 5.9 500: H<sub>2</sub>O Observatory (Christeson)
- 5.10 504: Newfoundland Basin

### **6. POTENTIAL FUTURE DRILLING: SSEP (Earth Env.)**

- 6.1 455: Laurentide Ice Sheets (Anselmetti)
- 6.2 465: SE Pacific Paleooceanography (Lyle)
- 6.3 482: Wilkes Land Margin: Cenozoic Glacial History (Flood)
- 6.4 485: Southern Gateway Aus.-Antarctica (Hine) PPSP
- 6.5 486: Paleogene Equatorial Pacific APC transect (Hine)

- 6.6 489: Ross Sea, Antarctica: Paleoceanography (Flood)
- 6.7 503: Weddell Sea: Glacial history (Anselmetti) NEW
- 6.8 510: Marion Plateau, NE Australia: Sea Level variations, (Whitmarsh) NEW
- 6.9 534: Paleoceanographic depth transect Shatsky Rise (Lyle) NEW

**7. OTHER BUSINESS (Srivastava)**

- 7.1 Drilling Deep holes. SSP concerns
- 7.2 Panel Membership
- 7.3 Liaison to SSEPs
- 7.4 Nominations for coming PPGs
- 7.5 Future SSP meetings
- 7.6 Other business

--- For Legs 180, 181,182 and 185 data sets were approved at previous SSP meetings and no changes have taken place since.

PPSP - items in the proposal of concern to PPSP

## Executive Summary

### ***Charge and procedures for the meeting, Working of SSP***

As a number of new members had joined the panel, Srivastava spend some time explaining for their benefit the mandate of SSP and how the meetings are conducted twice a year. He then explained the charge for this meeting which were to: (1) to evaluate the site survey readiness of proposals recommended by the two SSEP's from their May 98 meetings, (2) to evaluate the site survey readiness of legs scheduled for drilling, and (3) to assess any site survey issues arising from legs that were drilled since our Feb 98 meeting. The main customer for the output of this meeting are the proponents of proposals and OPCOM, who will use the evaluations resulting from item (1) above as input into designing the drilling schedule for FY'2000 at their August meeting. He also explained, for the benefit of those new to this panel, the role of this panel in JOIDES.

The following recommendations, action items and point of consensus resulted from this meeting.

**SSP recommendation # 1 to SCICOM** concerning modification to the new site summary forms. It is recommended that the new site summary forms be revised to more clearly explain to proponents when each form should be submitted. To facilitate their use by other ODP agencies during the program development of a proposal it is recommended that a system for electronic submission of data on these forms should be set up.

*Explanation:* Proponents are confused about how to complete the new site summary forms. This confusion stems largely from a misconception that all pages need to be filled out at the same time, in spite of the fact that a schedule of when each page needs to be submitted appears on the bottom of the first page.

Page 1 is intended to be the basic documentation of site location, name and purpose and is filled out with each revision of a proposal.

Page 2 (site survey information) and page 3 (logging information) need only be filled out when submitting a full proposal and whenever this information changes substantially.

Pages 4 and 5 (safety information) should only be submitted when the proposal has been scheduled as a drilling leg and is being prepared for PPSP. In order to reduce the confusion, we propose the following changes.

1. Each form's purpose will be clearly noted at the top of each page along with information on when it is to be submitted.
2. Instructions on the use of forms will appear in the next Guide to the Ocean Drilling Program.
3. The Data Bank Manager in consultation with Logging Group, JOIDES Office, SSP and PPSP Chairs will simplify Page 1.
4. New electronic versions of these forms will be placed on the JOIDES web site, with pages posted as individual documents.

SSP also recommends that electronic submission of the information on these forms should be set up.

**SSP recommendation # 2 to SCICOM**, for those proposals where it is envisaged that problems may arise during drilling certain sites that the planned scientific objectives in that proposal may not be achieved. SSP recommends to SCICOM that for such proposals it should become mandatory to include more than one alternate site or alternate sets of scientific objectives for drilling a set of other sites near by, in order to achieve maximum scientific benefits from drilling.

*Explanatory note:* Considering the problems encountered by Leg 180 in drilling their prime site and their lack of success in locating a successful alternate site, it is recommended that the guidelines for including alternate sites in such proposals, like those presently being considered for drilling in northern or southern

high latitudes, become mandatory. Alternately a set of secondary scientific objectives should be included for drilling a set of other sites where fewer problems are likely to occur. This is especially applicable to the PACMANUS proposal where barerock drilling in a very high temperature environment is proposed. Nankai proposal to some extent fall under such proposals too.

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**Action item # 1:** All watchdogs to write to lead proponents of proposals they watchdogged at this meeting, reporting the sense of SSP discussion and enclosing the relevant section of the minutes. Copies of this letter must be sent to the DB and to the designated SCICOM watchdog. The entire correspondence can be sent by e-mail.

**Action item # 2:** Data Bank manager, Dan Quoidbach, to write to the co-chiefs of designated legs, reporting the sense of SSP discussion and enclosing appropriate section of the minutes.

**Action item # 3 :** Srivastava to send a letter to Roy Hyndman, Chair of Seismogenic Zone, suggesting a special meeting of a group of selective scientists, from the two panels and from outside, be held to address the site survey requirement for drilling in seismogenic zones.

**Action item # 4 :** Srivastava to inform SCICOM and SSEPs Chairs of the names of the two members who will be the liaison to the two SSEPs for their November meeting.

**Action item # 5 :** Srivastava to ask for SCICOM's permission to hold the two 1999 meetings.

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**SSP Consensus # 1:** SSP appreciates receiving new data from the French cruise for Leg 183 (Kerguelen Plateau). SSP appreciates proponents' efforts in quickly processing the data and depositing it with the DB. The migrated data for profile MD47/10 to be used for site KIP-13 is still missing. SSP recommends that migrated data for this profile be deposited with the DB as soon as possible. SSP is concerned about location of one of the primary site KIP-3F where velocity information suggest presence of talus or sediments. It is recommended that it be shifted slightly on the same line where basement is imaged far better. PPSP approval for the new location must be sought before the Leg. Site Survey Status for this leg is 1B.

**SSP Consensus # 2:** High-resolution seismic data needs to be collected by J/R at most of the sites to be drilled on Leg 184 to understand the three dimensional sedimentary structure at the drill sites. The Co-Chief scientists should ensure that the Data Bank has the most recent site information together with navigation. The precise locations of the approved sites and depth to be drilled should be marked on profiles in the Data Bank. TAMU should get permission to collect additional data from J/R at the same when asking for drilling permission.

**SSP Consensus # 3:** Leg 186 (Seismic Network, JT) will drill two sites into basement that will be instrumented with both a broadband seismometer and strain meters. These two stations will provide new constraints on strain episodes and slow earthquakes in the Japan Trench. SSP rates the site survey readiness of these sites as 1A, and wish the proponents good luck in their drilling efforts.

**SSP Consensus # 4:** Based on SSP evaluation of the data submitted at their July 97 meeting, 19 sites were found to have adequate data for drilling during Leg 187 (Aus.-Antrac. discordance). With this number of approved sites, it is the considered opinion of the main proponent that drilling objectives for this leg now can be achieved. In SSP opinion most of the required data for this Leg now exist and, hence, it is ready for drilling. Additional data will need to be collected by J/R to ensure the horizontal extent of the sediment pockets at the drilling sites.

**SSP Consensus # 5:** New submissions to the Site Survey Data Bank have been made that significantly improve the data package for proposal 490 (Prydz Bay; Leg 188). Most of the required site survey data is in the Data Bank and the current data omissions/questions should be easily resolved once the proponents have responded to them. It is suggested that an alternate site to the prime site PBF-6 be located far enough from it in case the prime site can not be drilled due to severe ice conditions.

**SSP Consensus # 6:** The proposal 431B (Western Pacific Network) seeks to drill two sites into basement in the western Pacific in order to install broadband ocean seismometers. All required data has been submitted to the data bank for these sites with the exception of a survey ship track with annotated shot points for site WP2. It is suggested that site WP2 be moved 100 CDP values to the left where basement is better imaged. The site survey readiness status of site WP1 is 1A and 1B for WP2.

**SSP Consensus # 7:** Proper plots of the merged navigation for proposal 445 (Nankai Trough) were constructed by the Site Survey Data Bank fulfilling the last essential data requirement. In the process, it was discovered that the position given for the WNT-01A Site is nearly 2 nautical miles east of the seismic line NT62-2. We suspect that two digits of the longitude have been transposed. The proponents should check the coordinates. The proposal is now rated 1A.

**SSP Consensus # 8.** SSP agreed that the quality of the recently submitted time migrated MCS data, 3.5 kHz subbottom data and compilation of all seismic tracks are adequate for proposed sites in proposal 448-Rev4 (Ontong Java Plateau). However there are errors in some of the data labelling which must be corrected. Further the expected sediment and basement velocity data based on sonobuoys were not provided and these must be made available to the Databank before the site survey package readiness can be further evaluated. The Panel expressed concern at the choice of location of sites OJ-6B and OJ-9C as main sites. The Panel requires the proponents to tabulate their basement picks, the calculated depths to basement and the velocities used for these computations and to submit same together with some of the missing MCS data to the Databank before February 1 dead line. It seems like a very ambitious one leg proposal considering three re-entry sites in the proposal. The proponents must consult TAMU for realistic drilling time estimates. Site survey readiness remains 2A.

**SSP Consensus # 9:** All vital data have been deposited in the DB for proposal 450 (Taiwan Arc-Cont. Collision) with the exception of true amplitude plots of seismic data at two of the sites where BSR is present. The proposal is rated 1A which means that it is ready to become a drilling leg. However, a PPSP pre-review would be required should it become a Leg.

**SSP Consensus # 10:** All required data for the Tonga Forearc proposal (451) reside in the Data Bank. This proposal, from an SSP perspective, is considered ready (1A) for drilling. If scheduled, proponents should supply nearby industry drilling results from Tongatapu for PPSP review to the DB.

**SSP Consensus # 11:** 3.5 kHz PDR data, migrated 6-channel seismic reflection data and detailed Hydrosweep bathymetric maps for all proposed sites are in the DB for proposal 463 (Shatski Rise). The migrated seismic reflection data are considered to be adequate to identify the basement. The data set is complete. Deep penetration MCS data would greatly enhance the interpretation of the results of deep drilling. Short surveys by the drill ship would be desirable, to provide cross lines at those sites which lack them. The proposal is ranked as 1A.

**SSP Consensus # 12:** All required data, with the exception of heat flow data, in support of proposal 479 (PACMANUS Basin) is now in the Data Bank. Site survey readiness is ranked as 1A. However, problem may arise in locating one of the proposed site PCM-3A from J/R using the video supplied. It may require placement of additional beacon or acoustic reflector at this site should this proposal becomes a drilling Leg and prior to J/R getting to the site depending on evaluation of the video by TAMU.

**SSP Consensus # 13:** Proposal 499, ION Equatorial, will drill a hole in the equatorial western Pacific as part of the ION program. A seismometer will be installed in the borehole, thus filling in a major gap in coverage between Central America and the Pacific Islands which exists with the current seismic network. All required data has been submitted to the ODP Data Bank, and SSP rates the site survey readiness status of this proposal as 1A.

**SSP Consensus # 14:** The proposal 500 (H2O Observatory) is for drilling a reentry hole at the Hawaii-2 Observatory (H2O) site in the Eastern Pacific. A junction box will be installed on the cable Fall 1998 prior to drilling the hole. The proposed sites are difficult for SSP to evaluate because primary and alternate sites will not be established until after the junction box is installed. SSP is concerned about the navigational errors on cable location - will the junction box be installed where site survey data was collected? Also, TAMU engineers state that they will need at least 50 m of sediment in order to install a reentry cone. SSP suggests that the proponents produce sediment isopach maps and identify the most promising regions in terms of sediment thickness prior to the junction box cruise, and also forward these maps to OPCOM through TAMU for their August meeting. SCS equipment should be on board the upcoming junction box cruise in case cable location is outside the surveyed area. The site survey readiness status of this proposal is 2B. SSP will upgrade the rating when the junction box is installed, a primary and alternate site is determined, and SCS data over those sites is submitted to the ODP Data Bank.

**SSP Consensus # 15:** A lot of site survey data submitted earlier in support of proposal 504 (Newfoundland Basin) and NARM exist in the Data Bank. This and additional data requested earlier by SSP need to be organized properly and be focused for drilling site NB-3A only, if a single deep hole is approved by SCICOM. Site Survey readiness remains 2A.

**SSP Consensus # 16:** No new data has been sent to the Data Bank for proposal 455 (LISO) since July 97. The site survey readiness of the proposal remains 2A. (Substantial items of required data are not in the Data Bank, but are believed to exist and are likely to be available in time for consideration for FY 2000 drilling schedule). The panel remains concerned about drilling depth at site LAW-01 where seismic record does not support the drilling objectives. The proponents should make serious efforts in depositing the required data with the DB before the February 1 deadline, if they wish their proposal to be further evaluated for site survey readiness at the SSP February 1999 meeting.

**SSP Consensus # 17:** The 3.5 kHz data for proposal 465 (SE Pacific Paleo.) have been submitted to the DB since our February meeting and the site survey readiness is judged as 1B as we are still missing processed SCS data and navigation map for PERU-1A site. These should be deposited with the DB before Feb. 1999 dead line.

**SSP Consensus # 18:** New seismic lines and possible new sites have been provided to the Data Bank in support of proposal 482 (Wilkes Land), but full site details and additional site data will be provided following an OGS cruise scheduled for early 1999. SSP ranking remains 3A; to be considered for FY2001 drilling. New site data will need to be deposited in the Data Bank prior to the Feb. 1 or July 1, 1999 deadlines.

**SSP Consensus # 19:** Proposal 485 (Southern Gateway) involves drilling between Tasmania and the South Tasman Rise and Antarctica to address Cenozoic climate changes and paleo-ocean currents. All required data for the proposal are now in the Data Bank with the exception of Site Summary forms for all of the sites which need updating. The proposal is ranked as 1A from site survey readiness perspective.

**SSP Consensus # 20:** All required data for proposal 486 (equatorial transect) has been received with the exception of some small items which need to be deposited with the DB as soon as possible, the site

survey status of this proposal is rated as 1A. All sites are well documented and no drilling foreseeable problem can be seen from the data supplied for these sites. The proponents should be congratulated for supplying all this data in a most organised fashion.

**SSP Consensus # 21:** While all requested data seems to have been provided to the Data Bank for Ross Sea proposal # 489, the SSP data readiness classification for this proposal remains 2A. This is because of the need to continue to resolve labelling problems on the existing profiles (including horizontal scales), the need for digital navigation data, and the need for a better understanding of the velocity data. Additional alternate sites should be identified to allow flexibility as operational conditions change.

**SSP Consensus # 22:** No new required data has been submitted to the Data Bank in support of proposal 503 (Weddell Sea) . Its site survey readiness is ranked as 2A. SSP encourages the proponents to submit copies the newly acquired and processed site survey data together with all required navigational data in digital form by the February 1 deadline, if they wish their proposal to be further evaluated for site survey readiness at SSP meeting in February 1999.

**SSP Consensus # 23:** The Panel requires existing seismic data, and certain other data to be collected during an April 1999 cruise (grid of seismic lines, 3.5 kHz, core descriptions etc) for proposal 510 (Marion Plateau), to be deposited with the ODP DB before SSP July 1999 meeting. Besides, additional data relevant to the possibility of encountering hydrocarbons in the proposed sites should be provided to the DB for possible PPSP preview. The Panel graded site survey readiness of this proposal as 3A.

**SSP Consensus # 24:** All sites in proposal 534 (Paleoceanographic depth transect Shatsky Rise) have been located on MCS lines collected for proposal 463. These are adequate to locate sites with respect to deep objectives, but sites need to be optimized for Paleogene objectives based on 3.5 kHz data or high resolution SCS. We don't know if this data exist from proposal 463 and for that reason this proposal is rated as 2A. All required data, if exist, or the reprocessed data as suggested should be deposited in the Data Bank by February 1 deadline.

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**SSP Motion # 1.** The Panel wishes to thank Kathy Ellins for her help, attention to details and feed back to this panel as JOIDES liaison person over the past four years. She participated and contributed enormously in many discussions held at this panel and has been a tremendous source of information and advice to this panel during the time when ODP was going through some major changes in its organisation. Her contribution to the working of this panel will be greatly missed. We wish her all the best in her new endeavour.

**SSP Motion # 2.** SSP would like to thank the three retiring members, Charlie Paull, Jean-Claude Sibuet and Shiri Srivastava for their enormous contribution to the working of this panel. Their expertise and wealth of knowledge has been a great asset to this panel. Panel wishes them all the best in their present and future endeavors.

**SSP Motion # 3:** SSP would like to thank the ODP Data Bank for their tremendous support to this panel by providing data housed at the Data Bank for panel's examination and for actively participating in many of the issues which have been of concern to this panel from time to time. The panel also wishes to thank them for organizing the marvelous feasts during this meeting and for being as ever such a gracious host for this meeting.

## Minutes

Note: These minutes are arranged in logical order for ease of reading, and do not reflect the exact order in which items were discussed at the meeting. Portions of the minutes in italics signify some of the discussions of importance to the proposals.

### **1. PRELIMINARY MATTERS (Srivastava)**

#### ***1.1 Introduction of members, liaison, guests and meeting logistics.***

Srivastava, SSP Chair, welcomed all to the meeting and mentioned the addition of five new members (Anselmetti, Kleinrock, Kuramoto, Lyle, and Meyer) and three liaisons (James Allan, Tom Davies and Dave Hodell) to the panel at this meeting. After introduction of all members he asked Dan Quoidbach, the host for this meeting, to address the meeting about local arrangements and the facilities at the meeting. Dan mentioned about the message he had received the previous day from Mike Enachescu about his inability to come to the meeting as he in the middle of salvaging things from his flooded office. Srivastava then asked if every one had received minutes from the previous meeting and if they found them to be satisfactory. He also asked for comments and suggestions on their improvement.

#### ***1.2 Charge and procedures for the meeting, Working of SSP***

As a number of new members had joined the panel, Srivastava spend some time explaining for their benefit the mandate of SSP and how the meetings are conducted twice a year. He then explained the charge for this meeting which were to: (1) to evaluate the site survey readiness of proposals recommended by the two SSEP's from their May 98 meetings, (2) to evaluate the site survey readiness of legs scheduled for drilling, and (3) to assess any site survey issues arising from legs that were drilled since our Feb 98 meeting. The main customer for the output of this meeting are the proponents of proposals and OPCOM, who will use the evaluations resulting from item (1) above as input into designing the drilling schedule for FY'2000 at their August meeting. He also explained, for the benefit of those new to this panel, the role of this panel in JOIDES.

#### ***1.3 Watchdog assignments and feedbacks to proponents***

Srivastava explained how the watchdog assignments are decided and asked if any one had any suggestion on it. Appendix E list the final assignments for this meeting.

Srivastava then explained how wachdogging a proposal is carried out and requested all members to follow the guidelines for sending a feedback to the proponent they had watchdogged at this meeting. He mentioned the urgency of communicating the comments of this panel to the proponents on their proposals as the watchdog forms the main link between the proponents and this panel. If for some reason a member is unable to do so he/she should let the Chair know about it so that the Chair may then send the comments directly to the proponent. The comments are to be cut out from the draft minutes of the meeting, which will be circulated by the Chair within a week after the meeting, and included with the covering letter. It was mentioned that a copy of this correspondence be sent to the Data Bank to ensure that all correspondences with the proponents are filed in the watchdog book. The correspondence can be by e-mail.

Srivastava asked all Watchdogs to fill out the data matrix forms as this is our main data inspection meeting. However, if there is a proposal which has little or no data in DB no matrix forms would be required to be filled out for them.

**Action item # 1: All watchdogs to write to lead proponents of proposals they watchdogged at this meeting, reporting the sense of SSP discussion and enclosing the relevant section of the minutes. Copies of this letter must be sent to the DB and to the designated SCICOM watchdog. The entire correspondence can be sent by e-mail.**

**Action item # 2: Data Bank manager, Dan Quoidbach, to write to the co-chiefs of designated legs, reporting the sense of SSP discussion and enclosing appropriate section of the minutes.**

#### **1.4 Action items from Berlin 1998 meeting**

All action items with the exceptions as noted below were taken care of by designated persons.

**Action item # 4 :** SSP Chair to discuss with the SSEPs Chairs on data requirements of highly ranked proposals at the PANCH or SCICOM/OPCOM combined meeting.

SCICOM Chair brought this to the attention of SSEPs Chairs.

**Action item # 6:** Srivastava to write a letter to SCICOM including the list of candidates for SSP Chair together with some comments and send it to the SCICOM together with copies of their Cvs.

This was done and the new Chair will be John Diebold from LDEO. Congratulation to John on behalf of SSP.

## **2. REPORTS**

### **2.1 SCICOM /OPCOM (Hodell)**

SCICOM/OPCOM meets twice annually:

Spring meeting is devoted to long range planning. Fall meeting sets the drilling schedule for another year (next meeting in August will set drill schedule through 2000).

Complete SCICOM/OPCOM minutes are available on the JOIDES homepage. These minutes are remarkably complete, hence, only portion relevant to SSP are summarized here briefly.

Hodell divided report into two parts:

- 1.) Specific Action Items or Motions by OPCOM and SCICOM that are relevant to this panel.
- 2.) General information on issues that are important for the entire ODP community:

Budgetary Implications of the program for Phase III (thru 2003)

Planning for continuation of the program beyond 2003 (IODP)

#### **1.) Specific Action Items or Motions of interest to SSP**

a. Hodell explained that the JOIDES Office will now provide the external evaluations of drilling proposals to the chair of the SSP.

b. The usefulness of the Co-Chief data packages will be an agenda topic at the next Co-Chief review meeting, which will take place in Washington on Oct. 2-4. Hodell will attend this meeting and encouraged members of SSP to express opinions about the site survey data packages.

c. As an outgrowth of discussions of the Nankai proposal, OPCOM requested that TAMU formulate clear policy and procedures for drilling in strong currents along the lines of those previously developed for shallow water drilling. This had not yet been completed as of the March SCICOM/OPCOM meeting but has been requested in time for the August meeting .

d. Hodell explained that SSP's concern about the ASK (automatic station keeping) system will be addressed by upgrade during upcoming drydock.

e. SSP put forward a request from the Data Bank that the winter submission deadline be moved from 1 January to 1 February, because the holiday season makes the 1 January deadline difficult to meet. OPCOM accepted the SSP recommendation.

f. SSP had expressed concern regarding the role of SSP liaisons to the SSEPs. This has been addressed in communication between the SCICOM Chair (Susan Humphris) and the SSEPs Chairs. Relevant SSP input will be considered by the SSEPs and SSP liaisons should act as conveyors of important site survey information on proposals.

g. SSP recommendation to SCICOM that a PPG be formed to address site survey requirements for Deep Drilling has been addressed by the establishment of a new DPG, the *Seismogenic Zone*. Part of the mandate of this proposal is to determine the site survey requirements both for deep drilling and to

maximize the scientific results from seismogenic zone drilling.

h. Hodell reported that in March, SCICOM established that the general ship track for the *JOIDES Resolution* will remain in the Indian and Pacific Oceans through FY'01. SCICOM anticipates that the ship will return to the Atlantic Ocean prior to the end of Phase III.

Hodell noted that there was not much discussion of drilling proposals at the spring meeting as the meeting emphasizes long-term planning, but OPCOM was briefed by TAMU on the logistical status of proposals that might be under consideration for FY 2000. Jack Bauldauf presented the Logistical/Operational Issues and said that TAMU had gone through all the proposals under consideration for FY'00 and had not detected any major operational risks.

## 2.) *General Issues of concern to the ODP Community*

Budget -- Nick Piasias, Interim Director of ODP at JOI presented Phase III budget projections. He announced that the cost of the program is increasing due to

1.) impact of inflation (assumed to be 2%) and

2.) day rate for the ship (re-negotiation of contract with ODL and day rate bonus to SEDCO of 1M that effectively increases the day rate).

The increased cost of the program is greater than the projected 1.5% per annum increase from NSF (Bruce). Any decrease from the international partners would exacerbate the problem. (e.g., France). Bringing in new member would aid the situation by providing new funds to the program. Piasias reported that the estimated deficit for Phase 3 was 5.86 million. Piasias told EXCOM that he was confident the budget could be balanced for FY99, but unlikely that similar savings could be found in future years without a reduction in service. As a result, EXCOM tasked SCICOM to "to prioritize future science objectives to maximize the objectives of the Long Range Plan, clearly indicating those which cannot be achieved under existing budget projections. SCICOM should also identify and prioritize changes in program activities, services, equipment needs and technological development. SCICOM is asked to forward its report to EXCOM by September 1998."

Hodell explained the procedures by which the prioritization of the Long Range Plan will be conducted with the help of some flow diagram.

*IODP - Planning:* Hodell announced that ocean drilling as we know will cease after Y 2003 unless we begin to plan NOW for continuation of the program beyond Phase 3. The organizational structure for planning an ocean drilling program in the 21<sup>st</sup> century was presented, including announcement of the conference to be held in Vancouver on May 26-29, 1999. Hodell encouraged panel members to submit abstracts and encourage their colleagues to do the same. Paul asked whether the abstracts should be broad and thematic or should specific sites be proposed. Hodell replied that although thematic abstracts would probably be preferable, there may be scientific questions that can only be addressed at very specific sites on the seafloor. Allan noted that this conference is not meant to be exclusive and all types of abstracts are encouraged. Hodell also noted that individuals or groups not previously associated with ODP are encouraged to submit abstracts.

## 2.2 *JOIDES (Ellins)*

Kathy Ellins gave a presentation on several items originating from SCICOM/EXCOM meetings of general interest to this panel. These are given in Appendix A. She also outlined some small procedural modifications adopted by SCICOM in their evaluation of highly ranked proposals during their meeting and requested that it would be helpful if SSP watchdogs would also send their comments to designated SCICOM watchdog (Appendix A) on proposals they watchdog during SSP meeting. As this was the last meeting for Kathy as SCICOM liaison to SSP, the following motion was passed by the panel to thank her for her input the working of this panel.

**SSP Motion # 1. The Panel wishes to thank Kathy Ellins for her help, attention to details and feed back to this panel as JOIDES liaison person over the past four years. She participated and contributed enormously in many discussions held at this panel and has been a tremendous source of**

**information and advice to this panel during the time when ODP was going through some major changes in its organisation. Her contribution to the working of this panel will be greatly missed. We wish her all the best in her new endeavour.**

### **2.3 PPSP (Ball)**

For the benefit of new SSP members, Ball reminded the members that the safety Panel is most closely related to SSP. This is because the data SSP specifies and requires to meet scientific needs of proposals for drilling are the same data used in the conduct of safety reviews. Ball reminded SSP members to INSIST early and often that proponents annotate seismic records properly with vertical and horizontal scales, time-depth relationship, vertical exaggeration and a synopsis of processing procedures.

### **2.4 ODPDB (Quoidbach)**

Since last meeting 333 items of data have been received in support of proposals. The Data Bank instructed the Leg 183, 184, 185 and 186 Co-chiefs in the preparation of their PPSP reports and in making their PPSP presentations. The Data Bank Manager attended the May PPSP meeting in Salt Lake City.

The Data Bank was visited by Tim Bralower who examined data on Shatsky rise for Proposal 534, as well as by Fred Davey who organized data for the Ross Sea proposal.

The basement storage area was cleaned up to make room for additional map tubes. In the process the original working sheets for the OMD atlas were discovered. Correspondence indicates that these were placed at the Data Bank in the early 80's for ease of duplication if anyone required the data at original scale. As no one has requested copies of these items for at least the past 10 years, the Data Bank is seeking how to dispose them. They will be offered to the lead author on each volume, then to any newcomer, and finally will be disposed of if there are no takers.

Updated track charts were produced for all proposals in the prospectus prior to the SSP meeting.

The Data Bank Manager will attend the Co-Chief review this fall in order to get feedback on operations packages and Data Bank services to proponents and Co-chiefs.

Some discussion took place on the modification of the new forms which proponents are required to fill in with their proposals. A group of seven SSP members and liaisons got together informally and discussed the modifications which need to be made to these forms. These modifications as outlined below were then adopted by the panel.

**SSP recommendation # 1 to SCICOM concerning modification to the new site summary forms. It is recommended that the new site summary forms be revised to more clearly explain to proponents when each form should be submitted. To facilitate their use by other ODP agencies during the program development of a proposal it is recommended that a system for electronic submission of data on these forms should be set up.**

*Explanation:* Proponents are confused about how to complete the new site summary forms. This confusion stems largely from a misconception that all pages need to be filled out at the same time, in spite of the fact that a schedule of when each page needs to be submitted appears on the bottom of the first page.

Page 1 is intended to be the basic documentation of site location, name and purpose and is filled out with each revision of a proposal.

Page 2 (site survey information) and page 3 (logging information) need only be filled out when submitting a full proposal and whenever this information changes substantially.

Pages 4 and 5 (safety information) should only be submitted when the proposal has been scheduled as a drilling leg and is being prepared for PPSP. In order to reduce the confusion, we propose the following changes.

1. Each form's purpose will be clearly noted at the top of each page along with information on when it is to be submitted.
2. Instructions on the use of forms will appear in the next Guide to the Ocean Drilling Program.
3. The Data Bank Manager in consultation with Logging Group, JOIDES Office, SSP and PPSP Chairs

will simplify Page 1.

4. New electronic versions of these forms will be placed on the JOIDES web site, with pages posted as individual documents.

SSP also recommends that electronic submission of the information on these forms should be set up.

## **2.5 TAMU (Davies)**

The last six months have been challenging for science operations at ODP/TAMU for a variety of reasons which include drilling problems on some of the Legs and shipping of some critical piece of equipment needed on a Leg to a wrong place. Other issues of interest that have been a focus of attention are referred to below and organized under the appropriate functional department.

*Management:* Although a draft of the contract extension for the operation of the *JOIDES Resolution* for the next five years was completed last November with Overseas Drilling Limited (ODL), the ODL Board of Directors chose to request small, but substantive, modifications to the draft at their meeting in March. A revised document is now waiting final approval.

Working with ODL, the work scope for the scheduled FY99 dry dock has been defined. NSF is contributing 6 million dollars (3 million in FY98 and 3 million in FY99) for ship repairs and refurbishments. In addition, approximately 300 thousand dollars will be spent by the Program for lab stack refurbishments.

*Drilling Services:* The hammer drill tests were badly compromised by excessive ship heaving which caused large fluctuations in loading at the drill bit/rock interface, and by the loss of equipment and time caused by the shipping problems experienced prior to Leg 179. Nevertheless, the hammer drill with a crown drilling bit did achieve impressive penetration rates (8 m in 1.6 hours), even when operated at less than optimal pressures. The hammer drill engineering results must be fully evaluated and digested before a plan for further testing and development can be defined, but the high penetration rates in gabbro suggest that the system is as capable in the marine realm as it has been shown to be in subaerial environments.

*Information Services:* ODP/TAMU has taken over the responsibility for all the JANUS source and object code. The product that Tracor delivered has proven to be robust and the transition of responsibility to ODP from Tracor has gone well. The JANUS application continues to have corrections made to small problems as they are encountered. Overall the system continues to function well and future enhancements will be made to improve the user interface. Although the funds to support a major project to migrate the historical ODP data are not available, reallocation of resources within IS permits the commitment of 1 FTE and a student worker to begin to migrate important data types with priorities established by SCIMP.

*Publication Services:* The transition from printed to electronic publication formats is well underway with products available for testing in CD-ROM and WWW formats. A beta group, consisting of members of the scientific community, has been established to provide feedback on design components. As the transition to electronic publication continues, a trend is developing that, if extrapolated into the future, suggests the *Scientific Results* volume for a given leg will shrink by as much as 75%. If this extrapolation is substantiated over the next six months to a year, we recommend the elimination of the *Scientific Results* volume and the creation of a WWW-based journal for data reports, synthesis papers and technical notes.

## **2.6 NSF (Allan)**

*NSF FY 1998 Field Programs (1999 Implementation):* It was pointed out that approximately 2-3 field programs are NSF/ODP funded every year. Out of 31 field programs funded in the last 10 years 28 are directly related to Legs drilled. Furthermore over the past six years 36 drilling Legs selected by JOIDES planning structure, 25 were proposed by US scientists while 11 were proposed by international partners. The followings are the approved and funded field programs for 1999.

- 1) A 3-D Seismic Investigation of the Sediment-to-Rock Transition and its Relationship to Nankai Subduction Thrust Seismicity: US-Japan Collaborative Program (Bangs, Shipley, Moore, Morgan, KC Moore).
- 2) Global and Local Controls on Depositional Cyclicity: the Canterbury Basin, New Zealand (Fulthorpe, Mann, and Frohlich).
- 3) Collaborative Research: Long-Term Continuous Sampling of Fluids in Instrumented Boreholes on the

Eastern Flank of the Juan de Fuca Ridge (Kastner and Wheat).

4) Offset Drilling on the Southeast Greenland Rifted margin: UC Davis Participation on the 1998 DLC Drilling Cruise (Leshner).

5) Structure of Oceanic Crust Formed at 200 mm/yr Spreading Rate (Wilson, Harding, and Kent)  
Spring 1999 ODP Council, Bonn

*International partners:*

1) Japan, Germany, UK, and US agreed to participate as full members for ODP Phase III.

ESF intends to, adjusting membership (Greece left, Italy lowered contribution, Portugal joined, Ireland may join). PacRim has given letter of intent at 11/12, China (1/6) committed to FY00, France contribution diminished to 2/3.

2) Accepted EXCOM's recommendation regarding privileges for ODP associate members.

o France, loses voting representation on EXCOM and SCICOM, retains membership on other panels. Has 2/3 representation on ship.

o China, has representation on one SEP and one technical/operational advice panel.

It was pointed out that SSP has now a Chinese member in its panel.

*Spring 1999 IWG Meeting, Bonn:*

1) IWG discussed plan asking JOIDES to help evaluate costs for IODP drilling using both a riser and a non-riser ship. Plan would include a JOIDES technology meeting to be held in Houston in November 1998 (basically an engineering and technology oriented meeting).

2) US and Japan agreed to proceed as equal partners in seeking funds for IODP drilling.

3) IODP currently envisioned as costing \$120M operationally, with a proposed breakdown of 1/3 Japanese, 1/3 USA and 1/3 member countries.

4) Scientific planning structure for both riser and non-riser drilling will be conducted from a common organisation together with the support activities as needed.

**2.7 ISSEP (Whitmarsh) & ESSEP (Flood)**

Minutes for these panel meetings are available on the JOIDES web site. However, Flood and Whitmarsh who attended these meetings as SSP liaisons summarized the discussions of proposals, noting those selected by ESSEP for external evaluation, and explained the grouping of proposals that are contained in the prospectus. They mentioned that these panels also felt that there may be technical problems associated with PACMANUS proposal and did not like the idea of a single hole only for Newfoundland Basin proposal. They prefer single hole with transect. They also commented on the lack of response from the proponents of Prydz Bay proposal but rank it as a high priority. Flood mentioned panels comments on the newly designed forms which proponents have to fill out.

**2.8. OSN1 pilot experiment (Christeson)**

Gail Christeson briefly summarized the results from an experiment carried out recently about 250 km off-shore Hawaii on the comparative study of broadband seismometer installed in different manners; inside a borehole (ODP hole 843B) versus resting on the seafloor versus buried in the seafloor sediments. This has important implication for ION Legs planned and proposed.

OSN1 experiment indicated that the borehole seismometer is the quietest at short periods (frequencies higher than 0.07mHz) and at least as good as the buried seismometer in the mid-period range (0.01 to 0.07 mHz). At longest periods, the borehole is noisier, but it can be improved in the installation of package in the hole (by filling the hole with sand or glass beads).

**3.0 SITE SURVEY IMPLICATIONS OF RECENTLY DRILLED LEGS (Davies)**

Although both Leg 177 and 178 were a great success, the hostile weather conditions in the far reaches of the Southern Ocean resulted in a loss of drilling time due to high winds, rough seas, and/or proximal icebergs. In addition, the inclement sea states contributed to the partial loss of the Lower Guide Horn which resulted in the curtailment of the Leg 177 science plan, restricted operating parameters during Leg

178, and an extended port call prior to the beginning of Leg 179 to effect repairs.

*Because of the excessive heave of the seas and loss of parts of guidehorn the Co-chiefs of Leg 178 had to chose a site on the slope (APSH-5) which was not includes in the program. There were no safety problem connected with it.*

More recently, we experienced logistic problems associated with supporting operations in a distant ocean when two containers bound for Cape Town and Leg 179 were misdirected by our shipping company to La Spetzia, Italy, prompting a major adjustment in the engineering and scientific activities scheduled for that leg. Moreover, continued high seas on Leg 179 compromised the hammer drill engineering experiment and reduced operational efficiencies during the drilling/casing of a hole at the NERO Ion site. Although the NERO operation was a success, the hole was not completed with sufficient time remaining to conduct a two ship seismic experiment that had been scheduled with the *Sonne*.

*Discussion took place on the use of Hammer drilling in PACMANUS Basin if scheduled as a Leg. According to Tom Davies it needs more testing. However, drilling on Leg 179 did prove that it is a feasible tool to use in deep water except for the pounding of the hammers at the bottom in rough seas. It needs active heave compensators. Suggestion was made that PACMANUS may be a good test site for it before drilling there seriously.*

Leg 180 has encountered serious operational problems (hydrocarbons and extensive talus deposits) which have so far prevented achieving the primary objectives.

*Some discussion took place on what can be done to avoid loss of major scientific objective of a Leg in case certain serious drilling or safety problems are encountered on that Leg . The following recommendation was then formulated by the panel.*

**SSP recommendation # 2 to SCICOM, for those proposals where it is envisaged that problems may arise during drilling certain sites that the planned scientific objectives in that proposal may not be achieved. SSP recommends to SCICOM that for such proposals it should become mandatory to include more than one alternate site or alternate sets of scientific objectives for drilling a set of other sites near by, in order to achieve maximum scientific benefits from drilling.**

*Explanatory note:* Considering the problems encountered by Leg 180 in drilling their prime site and their lack of success in locating a successful alternate site, it is recommended that the guidelines for including alternate sites in such proposals, like those presently being considered for drilling in northern or southern high latitudes, become mandatory. Alternately a set of secondary scientific objectives should be included for drilling a set of other sites where fewer problems are likely to occur. This is especially applicable to the PACMANUS proposal where barerock drilling in a very high temperature environment is proposed. Nankai proposal to some extent fall under such proposals too.

### **3. SITE SURVEY STATUS OF UPCOMING SCHEDULED LEGS FOR 98 & 99 \***

#### **4.1 Leg 183, Kerguelen Plateau and Broken Ridge: origin, growth and evolution (457-rev 4; Frey)**

*SSP Watchdog:* Permanent: Kuramoto

*SSP Proponent:* None

*Target Type:* G (Topographically elevated features)

At our Berlin meeting, SSP had requested the proponents to submit a migrated copy of profile MD47/10 for their primary site KIP-13. It is not received as yet.

Three new lines, MD109-05 (for KIP-1 & 2), MD109-06 (for KIP-2), MD109-09 (KIP-3) have been received by the DB. These data were collected by Marion Dufresne, a French research vessel. All of this data is of high quality and adequate to decipher the basement lithology and drilling depths.

The velocity data at site KIP-3F on profile MD109-09 shows very slow velocity values compared to the surrounding area. Also the basement reflector seems to be rather a low frequency feature. It could suggest presence of talus deposits, clastic sediments, or intrusive rocks, but not lava flows. SSP recommends that this primary site be moved to some adjacent shot points where the basement velocity shows acceptable values for a lava flow. **Proponents are advised to contact PPSP to get their approval**

*for the new selected site as the PPSP will not be reviewing this proposal again.*

**SSP Consensus # 1: SSP appreciates receiving new data from the French cruise for Leg 183 (Kerguelen Plateau). SSP appreciates proponents' efforts in quickly processing the data and depositing it with the DB. The migrated data for profile MD47/10 to be used for site KIP-13 is still missing. SSP recommends that migrated data for this profile be deposited with the DB as soon as possible. SSP is concerned about location of one of the primary site KIP-3F where velocity information suggest presence of talus or sediments. It is recommended that it be shifted slightly on the same line where basement is imaged far better. PPSP approval for the new location must be sought before the Leg. Site Survey Status for this leg is 1B.**

#### **4.2 Leg 184: East Asian Monsoon History (484-rev; Wang)**

*SSP Watchdog:* Permanent: Flood

*SSP Proponents:* None

*Target Types:* All sites as Type B (Passive Margin)

This leg was reviewed by PPSP and TAMU in May resulting in the approval of three sites as proposed (SCS-1, SCS-2 and SCS-4), the movement of two sites (SCS-3 shifted to SCS-3C; depth limited to 300 m, and SCS-5B shifted to SCS-5C) and the disapproval of one site (SCS-8; southern South China Sea). Subsequent to this meeting, four additional sites were proposed and evaluated by PPSP. SCS-5D and SCS-5E are alternates to SCS-5C; and SCS-9 and SCS-10 are alternates to SCS-8. SCS-5D and SCS-5E were approved after minor shifting (final positions need to be specified for SCS-5D and SCS-5E), SCS-9 was approved to 400 m, and SCS-10 was disapproved by PPSP. Additional data submitted to the Data Bank includes several reprocessed (migrated) lines for the northern sites and new MCS lines supporting the southern sites. Some industry well logs have also been provided.

The survey needs for SCS-1, 2 and 4 were discussed in the February 1998 SSP minutes. High-resolution crossing lines need to be collected at SCS-2 and SCS-4 where no crossing lines exist or where there is lateral variability that needs to be understood to derive the best science from these sites. The JOIDES Resolution should collect these lines if they cannot be obtained prior to the cruise.

Comments on the new sites:

**SCS-3C:** The seismic profile images parallel layering in the depth interval to be drilled. There is an oblique crossing at the site, but high-resolution crossing lines should be collected at this site to show the structure of the upper layers. The JOIDES Resolution should collect these lines if they cannot be obtained prior to the cruise.

**SCS-5C:** A prominent regional reflection (irregular at the site) is present at about 0.5 sec subbottom. Penetrating this reflection at 0.6 sec subbottom was one of the objectives at SCS-5. The nearby MCS line does not quite cross the primary line at this site. Crossing high-resolution lines should be collected at this site to show the structure of the upper layers. The JOIDES Resolution should collect these lines if they cannot be obtained prior to the cruise.

**SCS-5D:** The seismic data suggest a minor unconformity at about 0.3 sec subbottom near the site, but it appears to be of limited horizontal extent. Crossing high-resolution lines should be collected at this site to show the structure of the upper layers. The JOIDES Resolution should collect these lines if they cannot be obtained prior to the cruise.

**SCS-5E:** An unconformity at about 0.3 sec subbottom extends for more than 10 km along Sonne 95-20. The unconformity is associated with one of at least two 0.05 sec thick, seismically transparent units that may be debris-flow deposits. A continuous stratigraphic sequence is unlikely at this site. Crossing high-resolution lines should be collected at this site to show the structure of the upper layers. The

JOIDES Resolution should collect these lines if they cannot be obtained prior to the cruise.

**SCS-9:** No navigation has been provided to the Data Bank for the MCS profiles on which SCS-9 is located, but the site is where two lines cross at the position given. The reflection pattern in the upper layers is somewhat discontinuous on the MCS data, but this pattern appears to be typical of the region. Deeper than 400 m, the sediment sequence is thicker than elsewhere along track, suggesting local ponding. No high-resolution data is available to show in detail the layering of the upper 400 meters. Crossing high-resolution lines are needed to determine the character of these layers. If these data cannot be collected before the cruise, they should be collected by the JOIDES Resolution as it comes onsite.

**Additional comments:** TAMU notes that camera surveys may be required near SCS-5C and SCS-5D that are near a submarine cable. Final site positions and water depths need to be verified for Sites SCS-5D, SCS-5E and SCS-9 where sites need to be shifted or where information has only been supplied by email. Navigation needs to be provided for the SCS-9 lines. When permission is sought for drilling these sites, permission for collection of additional seismic profiling from J/R also needs to be requested at the same time. The precise locations of the approved sites and depth to be drilled should be marked on profiles in the Data Bank.

**SSP Consensus # 2: High-resolution seismic data needs to be collected by J/R at most of the sites to be drilled on Leg 184 to understand the three dimensional sedimentary structure at the drill sites. The Co-Chief scientists should ensure that the Data Bank has the most recent site information together with navigation. The precise locations of the approved sites and depth to be drilled should be marked on profiles in the Data Bank. TAMU should get permission to collect additional data from J/R at the same when asking for drilling permission.**

#### **4.6 Leg 186: Western Pacific Seismic Network (431; Suyehiro)**

*SSP Watchdog:* Christeson

*SSP Proponents:* None

*Target Types:* E (Open Ocean Crust with sediments <400 m)

This leg will drill two sites into basement directly above the subducting plate interface; these boreholes will be instrumented with both a broadband seismometer and strain meters. The stations will provide new constraints on strain episodes and slow earthquakes in the Japan Trench. Sediment thickness at both sites is estimated by the proponents to be 1400 m. At past meetings, the SSP has been concerned about sediment thickness estimates, and encouraged the proponents to incorporate OBS data into their estimates. The proponents have done so in the report they prepared for PPSP which was also submitted to the data bank. SSP now rates the site survey readiness of these sites as 1A, and wish the proponents good luck in their drilling efforts.

**Site survey readiness status:** 1A

**SSP Consensus # 3: Leg 186 (Seismic Network, JT) will drill two sites into basement that will be instrumented with both a broadband seismometer and strain meters. These two stations will provide new constraints on strain episodes and slow earthquakes in the Japan Trench. SSP rates the site survey readiness of these sites as 1A, and wish the proponents good luck in their drilling efforts.**

#### **4.7 Leg 187: Australia-Antarctica Discordance (426; Christie)**

*SSP Watchdog:* Sibuet

*SSP Proponent:* None

*Target Type:* E (Open Ocean crust with sediments < 400m)

The intent of this proposal is to locate and to characterise the boundary between sea-floor basalts that were derived from the mantle of the Pacific ocean and those belonging to the Indian ocean. Nineteen (1b, 2b, 3b, 4c, 8c, 13b, 14c, 16, 20, 21, 23, 27, 28, 29, 33, 34, 35, 36 and 37) sites were approved by SSP during their previous meeting.

It is expected that about 10 to 12 holes will be drilled during a single scheduled leg. According to the proponents the distribution of approved sites is sufficient to fulfill the objectives of the leg which is to identify the location of the mantle isotopic boundary at the AAD. If onboard geochemical analyses are available, the distribution of approved sites should also be adequate to better define the position of this boundary. However, because cross-lines could not be obtained at all sites, it is suggested that these be recorded onboard J/R during the site approach to ensure the horizontal extent of the sediment pockets at the drilling sites.

Since our February meeting no changes have taken place in the data status of this leg. In SSP opinion, it is considered ready for drilling.

**SSP Consensus # 4: Based on SSP evaluation of the data submitted at their July 97 meeting, 19 sites were found to have adequate data for drilling during Leg 187 (Aus.-Antrac. discordance). With this number of approved sites, it is the considered opinion of the main proponent that drilling objectives for this leg now can be achieved. In SSP opinion most of the required data for this Leg now exist and, hence, it is ready for drilling. Additional data will need to be collected by J/R to ensure the horizontal extent of the sediment pockets at the drilling sites.**

#### ***4.8 Leg 188: Prydz Bay Glacial History (490; O'Brien)***

*SSP Watchdog:* Paull

*SSP Proponents:* None

*Target types:* B (Passive margin)

The proposal in the prospectus is out-of-date with respect the recent data submissions. The existing text and figures make reference to several sites that are not in the current data package. We considered only the following sites: PBS-1A, PBS-2A\*, PBF-4A, PBF-5A, PBF-6A\*, PBD-12A\*, PBD-13A, and PBD-15A (\* marks primary sites). Site PBF-5A has a complete data package, but is not in recent master table. We assume that the other sites are no longer active. Also, the stated positions for Sites PBD-12A and PBD-13A are the same on some of the forms.

Although there are three proposed sites on the Prydz Bay Fan that fulfill the data requirements (PBF-4A, PBF-5A, and PBF-6A\*), they are all rather close together. It would be valuable if another alternate fan site could be submitted that is far enough away with perhaps different ice conditions during drilling.

A sea floor parallel reflector at ~13 msec sub-bottom on the lines near PBS-2A stimulated considerable discussion. The panel would like to know whether this is a data artifact or a real geological feature? It was also questioned as to whether the PBS-1 and PBS-2 will be re-entry sites.

The proposal is now rated 1B.

**SSP Consensus # 5: New submissions to the Site Survey Data Bank have been made that significantly improve the data package for proposal 490 (Prydz Bay; Leg 188). Most of the required site survey data is in the Data Bank and the current data omissions/questions should be easily resolved once the proponents have responded to them. It is suggested that an alternate site to the prime site PBF-6 be located far enough from it in case the prime site can not be drilled due to severe ice conditions.**

## **5. POTENTIAL FUTURE DRILLING: SSEP (Earth Int.)**

### **5.1 Western Pacific Seismic Network (431b; Suyehiro)**

*SSP Watchdog:* Christeson

*SSP Proponents:* None

*Target Types:* D (Open Ocean Crust with sediments >400 m) and E (Open Ocean Crust with sediments <400 m)

This proposal seeks to drill two sites into basement in the western Pacific in order to install broadband ocean seismometers, as part of the Ocean Seismic Network. WP1 is located in the Philippine Sea, and WP2 in the Western Pacific. Information was supplied to the data bank about sediment thicknesses and two-way travel times encountered at nearby drillsites. Site WP1 is now rated by the panel as having a site survey readiness status of 1A, assuming that the sediment thickness information as supplied is accurate. Site WP2 has caused concern because of reverberations in the profile, and questions about basement identification and sediment thickness. It is suggested that this site be moved about 100 CDP points to the left where basement is better imaged. Site 581, which was drilled on Leg 86, encountered 75 m of chert above basement. The panel again examined this profile and decided that the reverberations in the data were probably due to chert, but that a basement reflector could be identified. However, it is suggested that the site be moved as suggested and a survey ship track with shot points annotated needs to be submitted to the data bank, so the site survey readiness of this hole is rated at 1B.

**Site survey readiness status:** WP1=1A, WP2=1B

**SSP Consensus # 6: The proposal 431B (Western Pacific Network) seeks to drill two sites into basement in the western Pacific in order to install broadband ocean seismometers. All required data has been submitted to the data bank for these sites with the exception of a survey ship track with annotated shot points for site WP2. It is suggested that site WP2 be moved 100 CDP values to the left where basement is better imaged. The site survey readiness status of site WP1 is 1A and 1B for WP2.**

### **5.2 Nankai Trough Accretionary Prism: Deformation and fluid flow (445; Moore)**

*SSP Watchdog:* Paull

*SSP Proponent(s):* None

*Target Type(s):* C (Active margin)

**SSP Consensus # 7: Proper plots of the merged navigation for proposal 445 (Nankai Trough) were constructed by the Site Survey Data Bank fulfilling the last essential data requirement. In the process, it was discovered that the position given for the WNT-01A Site is nearly 2 nautical miles east of the seismic line NT62-2. We suspect that two digits of the longitude have been transposed. The proponents should check the coordinates. The proposal is now rated 1A.**

### **5.3 Ontong Java Plateau Origin (448-Rev 4; Mahoney)**

*SSP Watchdog:* Permanent: Whitmarsh

*SSP Proponents(s):* None

*Target Type(s):* D (Open Ocean Crust with Sediments>400m) and E (Open Ocean Crust with Sediments<400m)

At its July '98 meeting SSP reviewed ODP proposal #448-Rev4 (also known as #448-Full) and the Proposal Update dated 6 July 1998. The Update was provided 1) following the collection and processing of new data collected during Leg 2 of a cruise of the RV Hakuho Maru in February 1998 and 2) in response to the SSP's February 1998 request for further information.

In the updated proposal five main sites are listed as OJ-3B (alternate OJ-3C), OJ-11C, OJ-7D (alternate OJ-7E), OJ-6B (alternate OJ-6C) and OJ-9C (alternate OJ-9D). The proposed holes aim to

penetrate 200 m into basement except at Site OJ9 where only 100 m is proposed. Three sites (OJ-3, OJ-7 and OJ-9) have sediments of 1000-1200 m and the proponents expect them to be re-entry sites. All sites are D targets except for Site OJ-11C which is an E target.

SSP had requested that the following items be submitted to the ODP DB by July 1 dead line.

1. time migrated MCS
2. a compiled track chart showing all existing seismic lines in the region,
3. seismic velocity information in the sediments and basement for the sites.

Items 1) and 2) had been provided to the Databank but no seismic velocity information had been made available; an exchange of emails with proponent Mike Coffin during the Panel meeting revealed that the sediment thicknesses tabulated in the updated proposal had been computed using stacking velocities (which the Panel regards as being commonly unreliable and subject to large uncertainties depending on the water depth at the sites and streamer length) but that sonobuoy velocities are expected to be available 'by the end of 1998'. The Panel stresses that good sonobuoy velocity data are essential for the planning of the re-entry sites in particular (see below) and are advisable for operational planning at the other sites. Because velocity data suitable for the computation of sediment thickness are not yet available from the SSP point of view this proposal still remains immature (see below).

The Panel inspected the newly provided seismic profiles and other data. In general the seismic sections all lack a horizontal scale and any indication of the geographical direction of the ends of the profile. It would have helped if the track charts had been labelled with Hakuho Maru line numbers. The Panel noted the lack of 3.5 kHz data at re-entry sites OJ-3 and OJ-7 and the complete absence of core information at all sites. 3.5 kHz data should be provided where it is available; the lack of cores is not a major concern to the Panel.

The Panel's comments on individual sites are as follows,

***At each site, basement depth needs to be picked in two-way travel time and corrected to depth using sonobuoy velocities; these two-way times, velocities and depth must be tabulated and submitted to the ODP DB before February 1, 1999 dead line.***

**Site OJ-3B:** site appears to be well located.

**Site OJ-3C:** site appears to be well located.

**Site OJ-6B:** The site designation on the seismic section appears to be mislabeled; the proponents should confirm that this is so with the Databank in writing. The Panel could not understand why this site was given as the main site in preference to the alternate OJ-6C since it is in deeper water and therefore will take longer to drill. The proponents must give their pick of basement in two-way time and converted to depth using the best velocity information available (it will help to use whatever information is available from Site 288). A line drawn at Site OJ-6B seems to indicate that the proponents expect to drill to a reflector at 1.07 s 2-way time but this is unrealistic.

**Site OJ-6C:** The site designation on the seismic section appears to be mislabeled; the proponents should confirm that this is so with the Databank in writing. The proponents must give their pick of basement in two-way time and converted to depth using the best velocity information available (it will help to use whatever information is available from Site 288). A line drawn at Site OJ-6B seems to indicate that the proponents expect to drill to a reflector at 1.3 s 2-way time but this is unrealistic.

**Site OJ-7D:** The site designation on the seismic section appears to be mislabeled; the proponents should confirm that this is so with the Databank in writing. The Panel could not understand, especially with a lack of velocity information, the proponents estimate of 1200 m of sediment at this site. The proponents must give their pick of basement in two-way time and converted to depth using sonobuoy velocities from elsewhere on the Ontong-Java Plateau.

**Site OJ-7E:** The site designation on the seismic section appears to be mislabeled; the proponents should confirm that this is so with the Databank in writing. The Panel could not understand, especially

with a lack of velocity information, the proponents estimate of 1305 m of sediment at this site. The proponents must give their pick of basement in two-way time and converted to depth using sonobuoy velocities from elsewhere on the Ontong-Java Plateau.

**Site OJ-9C:** This site is located at or near the intersection of a Jean Charcot and a Hakuho Maru track. Only the Charcot track appears to have been submitted to the Databank. The Panel was concerned that this site appears to have to penetrate a sill/flow before reaching basement; this may cause unnecessary difficulty in drilling to basement. The proponents must give their pick of basement in two-way time and converted to depth using sonobuoy velocities. The part of KH98-1, Line 401 that crosses the site must be submitted to the Databank.

**Site OJ-9D:** This site is located at or near the intersection of a Jean Charcot and a Hakuho Maru track. This site appears to offer a window into basement and therefore to be a better site than the main site (OJ-9C). The proponents must give their pick of basement in two-way time and converted to depth using sonobuoy velocities.

**Site OJ-11C:** The proponents must give their pick of basement in two-way time and converted to depth using sonobuoy velocities.

Site Survey readiness classification : 2A, pending the submission of seismic velocity calculations based on sonobuoy or OBS data and other items as specified.

**SSP Consensus # 8.** *SSP agreed that the quality of the recently submitted time migrated MCS data, 3.5 kHz subbottom data and compilation of all seismic tracks are adequate for proposed sites in proposal 448-Rev4 (Ontong Java Plateau). However there are errors in some of the data labelling which must be corrected. Further the expected sediment and basement velocity data based on sonobuoys were not provided and these must be made available to the Databank before the site survey package readiness can be further evaluated. The Panel expressed concern at the choice of location of sites OJ-6B and OJ-9C as main sites. The Panel requires the proponents to tabulate their basement picks, the calculated depths to basement and the velocities used for these computations and to submit same together with some of the missing MCS data to the Databank before February 1 dead line. It seems like a very ambitious one leg proposal considering three re-entry sites in the proposal. The proponents must consult TAMU for realistic drilling time estimates. Site survey readiness remains 2A.*

#### **5.4 Taiwan arc-continent collision (450, Lundberg ) PPSP**

SSP Watchdog: Sibuet

SSP Proponent(s): None

Target Type(s): C: Active margin for sites 1-5,7 and D: Open Ocean Crust with sediments >400m for site 6.

This proposal has been reviewed 8 times by SSP since 1994. It was previously rated 1A which means that it is ready to become a drilling leg. However, we suggested that it may require PPSP pre-review for two sites where a BSR exist should this proposal becomes a leg. Three re-entry sites with casing are planned and may pose some time constraints during drilling. Suggest that for drilling time estimated TAMU should be consulted.

For PPSP pre-view it would be necessary to provide true amplitude plots of the seismics. If the proposal is accepted during the next OPCOM meeting (summer 98), the PPSP pre-review will take place during the November PPSP meeting. In that case, the Joides Office will directly contact the main proponent after the OPCOM scheduled meeting in August 1998.

**SSP Consensus # 9:** *All vital data have been deposited in the DB for proposal 450 (Taiwan Arc-Cont. Collision) with the exception of true amplitude plots of seismic data at two of the sites where BSR is present. The proposal is rated 1A which means that it is ready to become a drilling leg. However, a*

*PPSP pre-review would be required should it become a Leg.*

**5.5 Arc Evolution and Mantle Geodynamics in Space and Time at an Intra oceanic Subduction Zone: Ocean Drilling in the Tonga Forearc (451-Full5; Tappin )**

SSP Watchdog: Present: Martin Kleinrock; Permanent: John Diebold

SSP Proponent: none

Target Type: C (Active Margins)

This proposal was rated 1A, ready for drilling, at the July 1997 meeting at Lamont. The proposal was revised, favouring its geochemical goals over the previous version's tectonic ones, based on external reviews and SCICOM comments. At the Feb 1998 SSP meeting in Berlin, the proposal was still rated 1A, though inconsistencies were noted in water and sediment depths between site summary forms and in the site summary table. These apparently typographical inconsistencies, and one in latitude, have been rectified, and the proposal remains rated 1A. Proponent responses to external reviewers/SCICOM comments on the 1997 revision (451-Full5) have been received and appear in good order. It was noted that there are some industry drill holes nearby on the island of Tongatapu. If OPCOM schedules this as a Leg, then SSP feels that the proponents should investigate these data and be prepared to supply them to PPSP for their consideration regarding hydrocarbon presence and hazards.

***SSP Consensus # 10: All required data for the Tonga Forearc proposal (451) reside in the Data Bank. This proposal, from an SSP perspective, is considered ready (1A) for drilling. If scheduled, proponents should supply nearby industry drilling results from Tongatapu for PPSP review to the DB.***

**5.6 Testing Hypotheses of Oceanic Plateau Formation by Drilling Shatsky Rise (463 - Add 3; Sager) SSP Watchdog: Heinrich Meyer**

SSP proponents: none, Adam Klaus (TAMU liaison)

Target type: G (Topographically elevated region) and E (open ocean crust with sediment <400m)

An eight-basement hole transect over the four main volcanic edifices comprising the Shatsky Rise is proposed. Objectives include testing a plume origin for the volcanics, dating them and determining plume dynamics. The proposed eight primary holes include two mini-core re-entry holes (SRSH-2 and SRNH-1) and two reference holes (SRSH-1 and SRSH7).

All data acquired during cruise TN033 of R/V THOMPSON in 1994 have been submitted to the Data Bank, including migrated 6-channel seismic reflection lines, detailed Hydrosweep bathymetric maps and Xerox copies of the 3.5 kHz PDR data from all eight primary sites and from all 23 alternate sites.

The proponents submitted new reprocessed seismic sections for sites SRSH-2, -2B, -2C, -3, -3B to the Data Bank as suggested by the panel during their Feb 1998 meeting. The panel examined these new versions and agree with the proponents' identification of the top surface of the volcanic edifice of the Southern High. The lateral continuity of the impedance contrast, the seismic pattern and the frequency content of these sections with constant filter parameters for whole traces, confirm the interpreted and proposed sediment/basalt contact.

The data set is now complete without any further concern of the panel.

Site Survey Readiness Classification: 1A

***SSP Consensus # 11: 3.5 kHz PDR data, migrated 6channel seismic reflection data and detailed Hydrosweep bathymetric maps for all proposed sites are in the DB for proposal 463 (Shatski Rise). The migrated seismic reflection data are considered to be adequate to identify the basement. The data set is complete. Deep penetration MCS data would greatly enhance the interpretation of the results of deep drilling. Short surveys by the drill ship would be desirable, to provide cross lines at***

*those sites which lack them. The proposal is ranked as 1A.*

**5.7 479: PACMANUS Basin (479; Binns)**

SSP Watchdog: Silver

SSP Proponent: None

Target Type: F (Bare rock drilling).

This proposal requests drilling of 4 sites into an active, felsic volcanic hydrothermal environment, located in the Manus basin of northern Papua New Guinea. The purpose of drilling these holes is to study the solid and fluid products of felsic rock - water interaction, responsible for global chemical fluxes and for ore formation. Drilling at these sites falls under the Bare Rock Drilling of SSP guidelines. A number of data items were requested to be deposited in support of this proposal with the DB. The proponent have provided all of the data, with the exception of heat flow data, we requested at our February meeting. The data are well documented. Though side scan data has been supplied, it turned out to be of little use because of its bad quality. The proponents have followed our suggestions to contact TAMU engineers for advice and more careful estimates of drill time for the proposed sites. Although potential drilling problems still remain, we are satisfied with the materials sent to the Data Bank.

In studying the videos provided, we were not able to clearly see the location of proposed site PCM-3A, and the proponents indicate that this is a problem also, requiring some expenditure of J/R time with bottom video to find the optimum site location. No beacon was put in place, and the only unnatural indication of this site are the weights dropped by the D/V Shinkai 6500. SSP recommends that copies of these videos for this site be sent to TAMU for their input into the viability of locating a drill site at PCM-3A. Their report on viewing should be made available to SCICOM and OPCOM in time for their August meeting. Markers may have to be dropped at the chosen site during a secondary survey if TAMU feels that the site cannot be located from J/R using the present videos. At other sites sediment thickness varies but should be adequate to put the HRGB. The proponents were able to supply only the temperature gradients they have been able to establish from submersible using the probe. SW of site 2A this has a gradient of 15 degrees, so there are obviously pockets of focused flow. Not much can be done to obtain heat flow values.

SSP had asked for revised time estimates. TAMU's estimates are based on using the hard rock guide base. It seems doubtful if all four sites can be drilled in one leg. Silver thinks that two legs is what may be needed for this program. He also thinks they should start with site 2A and, if that goes well, then come back and do the rest. Could be drilling problems - rate, tools. The panel debated whether it is better to have a more expensive side scan survey, or more visual surveying. Jean Claude Sibuet noted that there is a clear idea of the morphology of the sea floor, and thus for SSP, nothing more is necessary for drilling, although it would be fascinating from a scientific point of view to have more survey data. All that remains is for TAMU to look at the video. Other sites, except 3A, have the markers and so there will not be problems of locating within a one metre scale.

***SSP Consensus # 12: All required data, with the exception of heat flow data, in support of proposal 479 (PACMANUS Basin) is now in the Data Bank. Site survey readiness is ranked as 1A. However, problem may arise in locating one of the proposed site PCM-3A from J/R using the video supplied. It may require placement of additional beacon or acoustic reflector at this site should this proposal becomes a drilling Leg and prior to J/R getting to the site depending on evaluation of the video by TAMU.***

**5.8 ION Equatorial (499; Orcutt)**

SSP Watchdog: Christeson

SSP Proponents: None

Target Type: E (Open ocean crust with sediments <400m)

This proposal, which targets objectives of the ION and OSN programs, proposes that a cased, cemented hole be drilled and fitted with a re-entry cone in the equatorial western Pacific. The site will fill in a major gap in coverage between Central America and the Pacific Islands which exists with the current seismic network. The proposed site is near ODP site 852 which was drilled on Leg 138.

The proponents have submitted to the data bank all required data: 1) Maps of satellite gravity and magnetics for the region which demonstrate that the sites are free of major structure and outside of regional anomalies, and 2) Displays of the SCS reflection data at an appropriate scale with the site clearly marked. The SSP classifies this proposal as 1A in terms of site survey readiness.

***SSP Consensus # 13: Proposal 499 (ION Equatorial) will drill a hole in the equatorial western Pacific as part of the ION program. A seismometer will be installed in the borehole, thus filling in a major gap in coverage between Central America and the Pacific Islands which exists with the current seismic network. All required data has been submitted to the ODP Data Bank, and SSP rates the site survey readiness status of this proposal as 1A.***

### **5.9 H2O Observatory ( 500; Stephen)**

SSP Watchdog: Christeson

SSP Proponents: None

Target Type: E

This proposal is for drilling a reentry hole at the Hawaii-2 Observatory (H2O) site in the Eastern Pacific. A seafloor observatory is currently planned at the H2O site. The proposal is to install a broadband seismometer in this hole as part of the ION network. A site survey cruise over the Hawaii-2 cable proceeded in August 1997, and bathymetry and sample SCS and 3.5 kHz data were supplied to the ODP Data Bank.

This proposal is for drilling a hole within 1 km of a junction box on the Hawaii-2 cable. The junction box will be installed in the Fall of 1998 on a cruise on the R/V Thompson. The proponents state that they do not know at present the location of the cable within  $\pm 2$  nm. The site survey cruise which took place last fall collected data over three sediment ponds where the cable is supposed to cross.

The panel was concerned about the error in cable location, since it was laid in 1964. ODP in the past has been told by cable companies that they do not know their locations within less than 10 km! The panel also was concerned about knowledge of the position of the junction box after its installation - if the junction box is installed by bringing the cable to the surface, cutting it, and adding the junction box then the final position on the seafloor might be quite different from sea surface position. It would be desirable to have some kind of acoustic beacon on the junction box. They strongly suggest that the upcoming junction box cruise should have seismic equipment on board to shoot SCS data in case the cable is discovered to be located away from the surveyed locations. TAMU engineers have studied the proposal and site description, and think they will need at least 50 m of sediment in order to install a reentry cone. Some variations in sediment thickness can be expected in the region based on DSDP drilling (site 40) results. SSP suggests that the proponents produce sediment isopach maps for the three sediment ponds and identify the most promising regions in terms of sediment thickness prior to the junction box cruise. They also suggest relaying these maps to OPCOM through TAMU for their August meeting.

The proposed sites are difficult for SSP to evaluate because final primary and alternate sites will not be established until after the junction box is installed. Only one example of the SCS data in the region has been submitted to the ODP Data Bank which looks rather poor in quality but basement can be deciphered easily. If this data is representative of the region, then unprocessed SCS profiles over the sites will be sufficient for SSP purposes. The site survey readiness status of this proposal has been changed from 2A to 2B due to concerns about uncertainties in cable location (is it definitely located in the region where the site survey was done?) and also the panel's inability to evaluate all three sites properly .

Site survey readiness status: 2B

**SSP Consensus # 14: The proposal 500 (H2O Observatory) is for drilling a reentry hole at the Hawaii2 Observatory (H2O) site in the Eastern Pacific. A junction box will be installed on the cable Fall 1998 prior to drilling the hole. The proposed sites are difficult for SSP to evaluate because primary and alternate sites will not be established until after the junction box is installed. SSP is concerned about the navigational errors on cable location will the junction box be installed where site survey data was collected? Also, TAMU engineers state that they will need at least 50 m of sediment in order to install a reentry cone. SSP suggests that the proponents produce sediment isopach maps and identify the most promising regions in terms of sediment thickness prior to the junction box cruise, and also forward these maps to OPCOM through TAMU for their August meeting. SCS equipment should be on board the upcoming junction box cruise in case cable location is outside the surveyed area. The site survey readiness status of this proposal is 2B. SSP will upgrade the rating when the junction box is installed, a primary and alternate site is determined, and SCS data over those sites is submitted to the ODP Data Bank.**

#### **5.10 Newfoundland Basin NARM "Deep Hole" Site NB-3A (504-Full2; Driscoll)**

SSP Watchdog: Acting: Srivastava, Permanent: Enachescu

SSP Proponents: Neil Driscoll, Jeanne-Claude Sibuet and Shiri Srivastava

Target Type(s): B (Passive margin)

This proposal was not evaluated during this meeting as neither the data requested at our February meeting was deposited to the Data Bank nor any communication received from the proponents. SSP concerns about this proposal remain unaltered from their February meeting. Site Survey status thus remains unaltered as 2A.

**SSP Consensus # 15: A lot of site survey data submitted earlier in support of proposal 504 (Newfoundland Basin) and NARM exist in the Data Bank. This and additional data requested earlier by SSP need to be organised properly and be focused for drilling site NB-3A only, if a single deep hole is approved by SCICOM. Site Survey readiness remains 2A.**

#### **6. POTENTIAL FUTURE DRILLING: SSEP (Earth Env.)**

##### **6.1 Laurentide Ice Sheets outlets (LISO, 455-rev; Piper)**

SSP watchdog: Anselmetti

SSP Proponents: None

Target Type: A (Paleoenvironment) and B (Passive Margin for site HUD-04A)

No new data has been submitted to the Data Bank since the July 1997 Meeting. The panel wants to reiterate the recommendations pointed out in the minutes from the July 1997 meeting to the proponents for completion of the site survey data package. Part of the high-resolution SCS data, 3.5 kHz data and core descriptions are still missing, and some of the existing seismic data is not annotated. No velocity data has been submitted. The panel would appreciate to receive digital navigation files. The proponents are requested to submit working scale track maps with site locations and core locations to the Data Bank.

The panel again issued some concern about Site LAW-01A, since proposed target depth exceeds seismic penetration at this site and numerous diffractions of unidentified origin obscure the image. The panel also discussed whether such a great target depth at this site is necessary to achieve the scientific objectives, since only the upper part of the section will probably yield a very high-resolution varved record.

Since no new data has been submitted, the Site Survey Readiness Classification remains 2A.

(Substantial items of required data are not in the data bank but are believed to exist and are likely to be available in time for consideration for FY 2000 drilling schedule).

***SSP Consensus # 16: No new data has been sent to the Data Bank for proposal 455 (LISO) since July 97. The site survey readiness of the proposal remains 2A. (Substantial items of required data are not in the Data Bank, but are believed to exist and are likely to be available in time for consideration for FY 2000 drilling schedule). The panel remains concerned about drilling depth at site LAW-01 where seismic record does not support the drilling objectives. The proponents should make serious efforts in depositing the required data with the DB before the February 1 deadline, if they wish their proposal to be further evaluated for site survey readiness at the SSP February 1999 meeting.***

### **6.2 SE Pacific Paleooceanography (465; Mix)**

SSP Watchdog: Lyle

SSP Proponent: None

Target Type: All sites A (Paleoenvironment)

The site survey Data Bank has received the Genesis III 3.5 kHz data package which completes the basic data package for this proposal. Reprocessed SCS data are still missing, however.

The proponents appear to have misunderstood the naming convention for proposed drill sites and have given new names/numbers to all drill sites surveyed on Genesis cruise. Because these names are attached to the site survey data, these names should be retained. If the sites are moved in the future only the letter part of the designation should be changed unless the objective also changes. The proposal would also be clear if the proponents submitted a new addendum outlining the drilling program with the new names.

We note that site SEPAC-13A appear to be mislocated on the seismic profile. SEPAC-13A is located at the cross of line 4 and line 6. The map indicates that the crossing is at about 2315z on line 4, not 2346z. The position of this site should be checked. In addition, the navigation map for PERU-1A is still missing. It should be located and sent to the DB.

Site Survey Readiness: 1B

***SSP Consensus # 17: The 3.5 kHz data for proposal 465 (SE Pacific Paleo.) have been submitted to the DB since our February meeting and the site survey readiness is judged as 1B as we are still missing processed SCS data and navigation map for PERU-1A site. These should be deposited with the DB before Feb. 1999 dead line.***

### **6.3 Wilkes Land Margin: Cenozoic Glacial History (482; Escutia).**

SSP Watchdog: Flood

SSP Proponent(s): none

Target type(s): B (Passive margin)

The proponents have been responsive to our previous requests and new seismic lines have been submitted to the Data Bank. These lines are in support of three new possible sites, although site forms are not provided for six named sites (WLSHE-04A to 09A). The new MCS lines also demonstrate the nature of the seismic ties from the shelf sites to the continental rise sites, especially for the reflection WL2. The proponent state that full site details and additional required site data will be provided following an OGS cruise scheduled for early 1999. The SSP watchdog will discuss survey needs with the proponent.

***SSP Consensus # 18: New seismic lines and possible new sites have been provided to the Data Bank in support of proposal 482 (Wilkes Land), but full site details and additional site data will be provided following an OGS cruise scheduled for early 1999. SSP ranking remains 3A; to be considered for FY2001 drilling. New site data will need to be deposited in the Data Bank prior to the***

**Feb. 1 or July 1, 1999 deadlines.**

**6.4 Southern Gateway Aus.Antarctic (485; Exon); PPSP**

SSP Watchdog: Hine

SSP Proponent(s): none

Target Type: B, D and G

Since the February 1998 SSP meeting in Berlin, the proponents have sent 19 new data items to the ODP Data Bank. Most of these items are seismic lines from the AGSO 202 cruise. As noted in the Berlin minutes, the proponents were asked specifically to submit crossing lines for the ETP-02A primary site and the new STR-02A alternate site. They have done so and have completed the primary requirements asked by the SSP. We still note that 3 alternate sites do not have crossing lines. We also note that ODP Site Description Form for the new alternate site STR02A has not been completed. We also ask the proponents to submit updated and accurate information on the latest ODP Site Description Form for all the other primary and alternate sites.

The SSP also acknowledges receipt of 485 Add 2--report on the seabed conditions near the proposed sites which was prompted by a conversation between Roger Flood of SSP and Nigel Exon at the May ESSEP meeting in Scotland. This report is adequate and alleviates any concerns about deploying a small re-entry cone.

We wish the proponents well in their quest to obtain a drilling leg.

***SSP Consensus # 19: Proposal 485 (Southern Gateway) involves drilling between Tasmania and the South Tasman Rise and Antarctica to address Cenozoic climate changes and paleo-ocean currents. All required data for the proposal are now in the Data Bank with the exception of Site Summary forms for all of the sites which need updating. The proposal is ranked as 1A from site survey readiness perspective.***

**6.5 Paleogene Equatorial Pacific APC Transect (486; Lyle )**

SSP Watchdog: Hine

SSP Proponents: Lyle

Target types: All sites A, Paleoenvironment

This new 486 Add (May 15, 1998) proposes a single leg of 11 primary APC sites to study the paleo Pacific equatorial ocean circulation at 56 Ma--the early Eocene, a period of global warmth and no polar ice sheet development. The key point of the proposal stated by the proponents is to "accurately define the flux of biogenic sediments within the narrow equatorial zone of high productivitythe signature feature of tropical atmosphere and oceanic circulation...". This is a pure paleoceanography proposal and the targets are classified as "A". None of the 11 primary sites and none of the 9 alternate sites pose problems

Since the Berlin SSP meeting in Feb 1998, the proponents have submitted a very large data set to the ODP Data Bank based upon their R/V Ewing site survey cruise which occurred Dec 97--Jan 98. During this cruise 4-channel 80 cubic inch (GI gun) seismic data, hydrosweep swath bathymetry, digital 3.5 kHz, magnetic data, and piston cores were obtained. Most of these data have been processed, reduced, and interpreted. The SSP commends the proponents for the thorough job in presenting the 4 volume data set to the Data Bank.

The SSP suggests, for completeness, that the proponents submit the remaining "loose ends" (more detailed core descriptions, copies of fully processed swath bathymetry, processed 3.5 kHz data, and magnetics data).

Since no required data for Target A sites are missing, SSP ranks this proposal as 1A.

***SSP Consensus # 20: All required data for proposal 486 (equatorial transect) has been received with the exception of some small items which need to be deposited with the DB as soon as possible, the site survey status of this proposal is rated as 1A. All sites are well documented and no drilling foreseeable problem can be seen from the data supplied for these sites. The proponents should be congratulated for supplying all this data in a most organised fashion.***

#### **6.6 Ross Sea, Antarctica: Paleooceanography (489; Davis)**

SSP Watchdog: Flood

SSP Proponents: None

Target types: B (Passive margin)

The proponents have been responsive to our requests. Site annotations have been upgraded on many existing seismic lines, several problems have been resolved, some new MCS and SCS lines have been submitted, and velocity summaries were provided. There are still some inconsistencies in the data set that need to be addressed (including labelling sites on nearby lines, marking crossing tracks, and horizontal scales near drill sites; the proponents are encouraged to visit again), but all of the pieces seem to have been provided in some form. One specific request is to provide digital navigation (with time and shot point information) for PD and NBP high-resolution seismic lines so that track charts can be plotted at the Data Bank. At present track line plots made by the Data Bank lack these important tracks.

Most of the sites are located along high-quality single-channel seismic (SCS) lines within a fairly dense grid of MCS profiles. However, most of the sites are not on the MCS lines. The proponents should evaluate how well the SCS and MCS lines tie together at crossings.

One concern is that the deepest site proposed (RSSHE-08B, 1200 mbsf; not yet labeled on the profile) targets a deep unconformity (RSU-6, thought to be the oldest glacial unconformity). Velocity at this site ranges from 2.11 km/s near surface to 2.77 km/s at depth suggesting that a 1200 m hole might not reach the targeted reflection. Given the fact that the high velocity at these sites affects the drilling depths and times, we request that the proponents more fully document the source of, and evaluate the accuracy of, the velocity data provided.

The proponents need to consider developing alternate sites where the same objectives can be met should ice conditions make drilling at some primary sites impossible. Ice cover can prevent the ship from operating in a particular region, new drilling rules constrain the sea state in which drilling can occur for water depths less than 600 m, and holes sometimes cannot be drilled in glacial shelf sequences because of boulder beds which are not generally detected on geophysical survey data. Wave statistics available for the region should also be summarized to aid in planning.

***SSP Consensus # 21: While all requested data seems to have been provided to the Data Bank for Ross Sea proposal # 489, the SSP data readiness classification for this proposal remains 2A. This is because of the need to continue to resolve labelling problems on the existing profiles (including horizontal scales), the need for digital navigation data, and the need for a better understanding of the velocity data. Additional alternate sites should be identified to allow flexibility as operational conditions change.***

#### **6.7 Weddell Sea: Cenozoic History of the East Antarctic Ice Shield and the Evolution of the Restricted Mesozoic Weddell Basin, (503; Jokat)**

SSP Watchdog: Anselmetti

SSP Proponents: None

Target types: B (Passive margin), D (deep ocean with sed. Thickness >400m)

No new data has been submitted to the Data Bank since the July 1997 Meeting. The SSP is aware of the existence of additional data that was acquired in January-March 1997 and that is currently being processed. This data would complete existing items in the Data Bank, in particular for some of the newly proposed Sites WSO7A and WSO8A. We encourage the proponents to submit the newly acquired and processed data together with a copy of all navigation data in digital form so it could be plotted at the DB.

The panel is concerned about the proximity of some primary and alternate sites, in particular Site WSO-4A and its alternate WSO-3A. In areas with difficult ice conditions it is recommended to have primary and alternate sites far apart in order to be able to react to ice conditions.

Since no new data has been submitted in spite of some additional data which has been collected, the Site Survey Readiness Classification has been changed to 2A from 1B (a large part of the required data exists but not in the data bank).

***SSP Consensus # 22: No new required data has been submitted to the Data Bank in support of proposal 503 (Weddell Sea) . Its site survey readiness is ranked as 2A. SSP encourages the proponents to submit copies the newly acquired and processed site survey data together with all required navigational data in digital form by the February 1 deadline, if they wish their proposal to be further evaluated for site survey readiness at SSP meeting in February 1999.***

#### **6.8 Marion Plateau, NE Australia: Sea Level variations, (510; Isern)**

SSP Watchdog: Whitmarsh

SSP Proponents: Anselmetti

Target types: B (Passive margin)

At its July '98 meeting SSP reviewed ODP proposal # 510-Full3. The sites were designated as target type B (Passive margin). The only data that had been submitted to the ODP DB was a track chart of existing seismic profiles.

First the Panel would urge the proponents to submit their existing seismic sections to the DB as a matter of importance ( please mark sites and planned penetration, horizontal scales, geographic directions of the ends of each profile, and shotpoint or similar annotations that can be linked directly to the track chart).

The Panel also had concern about encountering hydrocarbons in the proposed holes, some of which (e.g. CS-05A, CS-08A) appear to be sited over potentially closed structures. The Panel foresees that, if scheduled, the proposal will require a PPSP pre-view. For that reason the proponents should seek out and include all relevant information from adjacent onshore/offshore commercial wells.

The Panel noted that the proponents have scheduled a site survey cruise in April 1999. The Panel stresses the importance of acquiring the followings during this cruise: grid of seismic lines in the vicinity of the each site (if such (commercial?) Data does not already exist), velocity information (from sonobuoys and not stacking velocities) in the vicinity of the sites (both the sedimentary mega sequences and the carbonate platforms). Acquisition of 3.5 kHz profiles and cores are very desirable. Sidescan swaths might be helpful if fluid flow objectives are added to the proposal. The seismic data to be collected in April 1999 should preferably be migrated before July 1, 1999 submission deadline to the DB but in view of tightness of schedule stacked data would be acceptable for preliminary viewing.

To have any chance of being scheduled in FY2001 ( and possibly 2002) a complete set of all the above data must be sent to the DB before July 1999 SSP meeting.

Site Survey data Readiness: 3A

***SSP Consensus # 23: The Panel requires existing seismic data, and certain other data to be collected during an April 1999 cruise (grid of seismic lines, 3.5 kHz, core descriptions etc) for proposal 510 (Marion Plateau), to be deposited with the ODP DB before SSP July 1999 meeting. Besides,***

***additional data relevant to the possibility of encountering hydrocarbons in the proposed sites should be provided to the DB for possible PPSP preview. The Panel graded site survey readiness of this proposal as 3A.***

#### ***6.9 Shatsky Rise: Paleooceanographic depth transect, (534; Bralower)***

SSP Watchdog: Lyle

SSP Proponents: None

Target types: All sites D (deep ocean with sediment thickness > 400 m).

This is a new proposal based upon the MCS data surveyed originally for proposal 463. These data are more than adequate for deep objectives. However, better data could be used to achieve the Paleogene objectives, especially in light of the known hiatuses in the upper section. Use of 3.5 kHz data collected on this cruise or reprocessing the upper parts of the seismic lines to better reveal the upper sediment package will be needed to optimize site locations for Paleogene locations. We also note that site SHAT-2 is near a section that is possibly disturbed. It should be moved slightly to avoid this section.

The proponents should also be aware that the deep objectives on some sites may require re-entry because of the presence of chert in this region.

Site survey Readiness rating: 2A

***SSP Consensus # 24: All sites in proposal 534 (Paleooceanographic depth transect Shatsky Rise) have been located on MCS lines collected for proposal 463. These are adequate to locate sites with respect to deep objectives, but sites need to be optimized for Paleogene objectives based on 3.5 kHz data or high resolution SCS. We don't know if this data exist from proposal 463 and for that reason this proposal is rated as 2A. All required data, if exist, or the reprocessed data as suggested should be deposited in the Data Bank by February 1 deadline.***

## **7. OTHER BUSINESS**

### ***7.1 Drilling Deep holes--- SSP concerns***

Site survey requirements for drilling deep holes has been one the major concerns of this panel for some time. A detailed discussion of this issue took place during the March 1996 meeting resulting in the formulation of a recommendation to PCOM at that time. Srivastava summarised, for the benefit of new members, this recommendation in which the panel recommended that this problem be addressed by a special group of scientists. PCOM first and then SCICOM deferred action on this recommendation to a later date. Recently a DPG on the Seismogenic Zone has been formed, whose mandate requires addressing site survey requirements specific to these regions. Srivastava suggested to the panel that this would obviously be the opportune time for this panel to work with the Seismogenic Zone DPG to address this problem. Silver suggested that perhaps we should wait until the DPG has met and he, as designated SSP liaison to this DPG, would be glad to bring their point of view to this panel for further discussion. Others felt that the problem was much more urgent as some deep holes are already in the preliminary planning stages. The discussion centred round the definition of a deep hole. Srivastava suggested that this was already discussed during the March 96 meeting and all we need to do now is to decide if we should combine our efforts on this problem with those of the newly formed DPG. The letter he had drafted to be sent to Hyndman, Chair of this DPG, was circulated to this panel for their consideration. The majority agreed with Srivastava's suggestion.

***Action item # 3 : Srivastava to send a letter to Roy Hyndman, Chair of Seismogenic Zone, suggesting a special meeting of a group of selective scientists, from the two panels and from outside, be held to address the site survey requirement for drilling in seismogenic zones.***

### ***7.2 Panel Membership (Srivastava)***

Srivastava mentioned that three panel members are due to be replaced after this meeting. They are Srivastava, Sibuet and Paull. Their replacement have already been decided as mentioned in our

February minutes. They are:

Srivastava will be replaced by a PACRIM consortium member from Korea, Dr. Park at July 99 meeting as Srivastava will be attending Feb 99 meeting to ensure an overlap between the old and new Chairs. Sibuet will be replaced by a French member Mr. A. Codou from Total Oil Comp and Paull's replacement is in the deciding stages by SCICOM. Sibuet mentioned that it is possible that when Enachescu leaves the panel that France could appoint him as an industry member and appoint another person as a French member . Srivastava to bring this to new Chair's attention.

Appendix X gives the list of members in this panel and their rotation schedule.

***SSP Motion # 2. SSP would like to thank the three retiring members, Charlie Paull, Jean-Claude Sibuet and Shiri Srivastava for their enormous contribution to the working of this panel. Their expertise and wealth of knowledge has been a great asset to this panel. Panel wishes them all the best in their present and future endeavors.***

### ***7.3 Liaison to SSEPs***

During our February 98 meeting the following were appointed as liaisons and alternates to the two SSEPs.

Roger Flood ----- ESSEP; alternate --Al Hine

Bob Whitmarsh ----- ISSEP; alternate --John Diebold

The next SSEPs is to meet in Gainesville, Florida, USA from November 2 to 4, 1998. After some discussion and persuasion the following agreed to attend the SSEPs meetings as SSP liaisons.

Martin Kleinrock ----- ISSEP; alternate -- Bob Whitmarsh

no one -----ESSEP

***Action item # 4 : Srivastava to inform SCICOM and SSEPs Chairs of the names of the two members who will be the liaison to the two SSEPs for their November meeting.***

### ***7.4 Nominations for coming PPGs***

***No new PPG exists and so this item was not discussed***

.

### ***7.5 Future SSP meetings (Srivastava)***

Sidney, Australia ----- Tuesday Feb. 23 to Thursday Feb. 25, 1999

Jock Keene from Sidney University and head of Australian ODP office will be our host for the meeting.

LDEO , Palisades ----- July 19-21 or July 26 -28, 1999

***Action item # 5 : Srivastava to ask for SCICOM's permission to hold the two 99 meetings.***

***SSP Motion # 3: SSP would like to thank the ODP Data Bank for their tremendous support to this panel by providing data housed at the Data Bank for panel's examination and for actively participating in many of the issues which have been of concern to this panel from time to time. The panel also wishes to thank them for organizing the marvelous feasts during this meeting and for being as ever such a gracious host for this meeting.***

Note from the Chair : This being the last minutes of the SSP meeting which I will be writing, I will like to take this opportunity to say that what a pleasure it has been for me to work, first as an SSP member and then as a Chair, with you all over this period. No doubt it meant making some adjustments in my working schedules from time to time but to me it has given a great sense of achievement which I will treasure for a long time. I have enjoyed every bit of my association with this panel and ODP in general.

## **Appendix B (TAMU) MANAGEMENT**

### **Status of Contract Extension with ODL**

In November 1998, negotiations were completed with Overseas Drilling Limited (ODL) relative to the contract extension through September 2003. A draft contract modification was provided to the ODL Board of Directors in March 1998 for review and approval. The ODL Board requested that modifications be considered and two additional changes were made.

ODL and TAMRF have started the contract modification on their respective paths of approval. JOI has concurred with the modification and forwarded it to NSF. ODL provided the modification to their parent organization, SEDCO/Forex, requesting Board approval. We anticipate receiving decisions from NSF and SEDCO/Forex at any time.

### **Dry Dock**

Maintaining the JOIDES Resolution's current American Bureau of Shipping (ABS) classification dictates that the vessel should undergo a major dry dock and hull inspection every five years. The process of classification must be satisfactorily completed for safety, operational, and insurance purposes.

During the basic dry dock/classification process (planned for autumn 1999), essential repairs and upgrades will also be performed.

### **Ship Modifications**

NSF is contributing 6 million dollars (3 million in FY98 and 3 million in FY99) for ship repairs and refurbishments. The costing of these tasks can only be estimated at this time because, until bids for major pieces of new equipment are received (i.e. ASK, DMS) or until a given project is started and the equipment in question opened up, the actual costs are impossible to predict. Therefore, the costs associated with these dry dock projects have been projected at the high end of the spectrum. If some major projects turn out to be less expensive than forecast (i.e. ASK, DMS), all of the projected work scope could be achieved. Alternatively, if projects are as expensive as forecast, then lower priority tasks will not be undertaken. In an effort to minimize the costs associated with dry dock activities, ODL will carry out as many work scope projects as possible utilizing the ship's crew prior to the dry dock.

Identified dry dock projects with cost estimates:

New Automatic Station Keeping Station	\$1,560,000
New Data Management System	998,000
Thrusters/Propulsion/Steering/Mooring	569,000
Environmental Equipment/Installation	50,000
Hull, Piping, and Shipboard Services	1,054,000
Drilling and Electrical Equipment	339,000
Classification	80,000
Lifesaving and Firefighting	110,000
Electrical Switchgear/Motors/Generators	154,000
Cranes	305,000
Shipyards Services and Supervision	540,000
Living Quarters	626,000
Radio Equipment	78,000
Lab Stack	21,000
Total	\$6,484,000

**Automatic Station Keeping** - The ASK system is the brain of the dynamic positioning system. While the present system remains functional, it is obsolete by today's standards. In order to maximize our chances for reliable operations for another five years, it is important to replace the old unit with a new system that will be more reliable and will operate much more efficiently, saving fuel and reducing wear on equipment.

**Data Management System** - The DMS monitors and controls the distribution of power to the vital pieces of equipment on the vessel (i.e., propulsion equipment, thrusters, drilling equipment, etc.). The

*JOIDES Resolution* is equipped with a DMS that is obsolete by today's standards and is neither effective, nor reliable. In order to ensure continued operation of the system and gain improved reliability for another five years, a new DMS will be required. A new DMS, used in conjunction with a new ASK system, will translate into much better reliability and in some situations improved fuel economy.

***Thruster, Propulsion and Steering*** - In order to maintain the ability to dynamically position the vessel, the thrusters must be thoroughly inspected and serviced to ensure their continued service.

***Environmental Equipment/Installation*** - These are costs associated with acquiring and installing environmentally compatible equipment required by regulations for vessels operating in environmentally sensitive areas (i.e. Antarctic). In this regard, a new garbage disposal system has been installed which exceeds environmental requirements for all marine operations.

***Hull, Piping, and Shipboard Services*** - The hull of the *JOIDES Resolution* is still in good condition after 20 years of service and, if properly maintained, another 15 to 20 years' life expectancy is reasonable. It is inevitable, however, that some corrosion will occur on various sections of the hull, tanks, and pipe work. It will be very important to thoroughly inspect, repair, and protect all sections of the ship exposed to the elements so that further corrosion does not reduce the life of the vessel.

***Drilling and Electrical Equipment*** - The equipment directly associated with the drilling function will be inspected, serviced, and maintained as required to ensure that it will be functional for another five-year contract.

***Cranes*** - The vessel has three cranes that will be 20 years old and require servicing, repair, and replacement of various components to ensure that they can continue to be operated safely.

***Shipyard Services*** - These costs are associated with utilizing the services of the shipyard that are not directly associated with any one project but are associated with all of the work performed.

***Living Quarters*** - Improvement to the living quarters will concentrate on noise reduction, room upgrades, improvements/replacement to the ventilation and air conditioning systems, and replacement of the fire detection system.

### **Science Modifications**

ODP is responsible for all laboratory stack maintenance and modifications in its FY99 budget and has set aside \$309,042 for this purpose.

ODP's Marine Laboratory Technicians will be carrying out as many projects as possible during the dry dock and associated transits under the project management of a Laboratory Officer.

The following lab stack projects have been proposed by Science Services:

- Refurbish the sonar dome and replace the defective 12-kHz transducer.

- Maintenance of aft transducers.

- Lab stack foundation access to allow visual inspection and possible foundation bolt replacement to the lab stack. The access panels will also allow for future foundation strengthening.

- Installation of a riser hold lift to increase the speed, efficiency, and safety of loading and unloading core and other materials from the riser hold.

- Modification of the core laboratory to increase the speed and efficiency of core and to provide adequate ventilation allowing for the safe degassing of potentially hazardous cores in the core lab.

- Blasting and repainting the fantail winches.

- Fume hood replacement in the chemistry laboratory.

- New cabinets and countertops in the chemistry lab.

- Conversion of the second core reefer, currently used to store supplies including chemicals, batteries, and photographic supplies, back to a core-only storage area. Alternative storage for the chemicals can be arranged in the second look lab. The photoshop requires roughly 130 cubic feet of refrigerated storage, which can be supplied by the acquisition of two refrigeration cabinets, which could also be housed in the second look lab.

- Refurbish the Sea Horse hydraulic motors for the seismic streamers.

- Removal of the Doppler sonar.

- Addition of mezzanine decks in the riser hold.

Reconfiguration of the riser hold mezzanine decks to increase and centralize storage areas on the *JOIDES Resolution*. All mezzanine decks would be directly accessible by the riser hold lift, thereby minimizing the manhandling of science supplies and cores by the Marine Laboratory Technicians.

Strengthen lab stack roof to receive van for microbiological work.

Strengthen drill collar pipe racks.

Convert lab to entirely potable water.

It is currently estimated that the *JOIDES Resolution* will be in dry dock for 40 to 45 days. An additional seven days will be required for sea trials.

### **Operations Schedule**

The operations schedule of the *JOIDES Resolution* can be found on Tamu's web site.

## **SCIENCE SERVICES**

### ***Staffing Information***

Dr. Carlota Escutia will soon be joining us as Staff Scientist to fill the vacancy created by Jamie Allan's move to NSF. Phil Rumford has moved into the position of Superintendent of the Gulf Coast Repository.

Shipboard Science Staffing for Legs 181-183 is complete. Co-chief scientists for Legs 184, 185 and 186 have been appointed. Staffing for Leg 184 is in progress, and is just commencing for Leg 185. Leg 184 will be the first leg with significant involvement of China, so staffing presents some new opportunities.

With the continued help of all partners, we have been able to maintain a reasonable overall balance of scientists from participating countries on ODP, although occasionally the balance varies on individual legs in response to needed areas of expertise and interests of a given participating country.

### ***Shipboard Lab Status***

The split-core MST system (also referred to as the Archive MST), was installed on Leg 179 and appears to be working well except for the core-imaging system. Changes to the camera and software for the imaging system are being made and will be installed on Leg 181.

As part of the proposed drydock-related work, a plan is being developed for improving core flow through the core lab. Copies of the new arrangement of the lab can be made available to anyone interested.

### ***Repositories***

The Bremen Repository has recently been extremely busy due to unusually large sample requests from Leg 177.

Construction of additional repository space at ODP continues, with completion scheduled for January 1999. This will add a further 11,000 sq. ft of repository space to the ODP College Station facilities, enough for about 20 legs worth of cores.

## **DRILLING SERVICES**

### ***Operations***

#### **Leg 178 - Anarctic Peninsula**

##### Introduction

Leg 178 recovered 1.8 km of sediment and sedimentary rock from 9 sites drilled off the West Antarctic Peninsula. The drilling systems used throughout the leg—the advanced piston corer (APC), extended core barrel (XCB), and the rotary core barrel (RCB)—are those most commonly used by ODP, and each performed within normal operating parameters. For example, recovery of soft sediment with the APC system typically exceeded 90% and core quality was generally excellent. For slightly more indurated sediment, the XCB system typically gave recovery of 40% to 90% (averaging 76.8% for the leg) and the core typically consisted of pieces of sediment and sedimentary rock undisturbed by drilling (biscuits) surrounded by slurry. For the glacial deposits on the continental shelf, the RCB system gave recovery that averaged only 11.6%. The diamict (granule, gravel, and boulder clasts supported by a poorly indurated matrix of sand and mud) encountered on the shelf proved to be difficult to spud into

and is one of the most difficult lithologies to recover as shown on prior legs (e.g., Leg 152 in the East Greenland Margin). As the matrix became more indurated, and the diamicts graded into diamictites, recovery and hole conditions improved. Even though Leg 178 was a fairly standard ODP leg from an operations view point, there were a few exceptions related mainly to drilling in high latitudes. An ice support vessel was contracted to aid in monitoring icebergs and weather conditions and to provide emergency assistance. An ice observer was also added to the SEDCO crew, which is now a standard requirement on high-latitude legs. The occurrence of drop stones and diamicts made establishing holes difficult, slowed the rate of penetration (particularly when large felsic igneous rocks were encountered), reduced core recovery, and clogged the nozzles on the RCB bit. Icebergs, though only a minor distraction for the most part, did force the ship off site several times during coring operations. The swell on the continental shelf often exceeded 2 m resulting in 62 hours of standby time and additional delays related to tripping the pipe in and out of the hole. Although the pipe was stuck several times, no Bottom Hole Assemblages (BHAs) or pipe were lost while coring in the glacial deposits on the shelf. Liner failures were not a significant problem on Leg 178, perhaps because the Coring Technicians used the locking-latch mechanism with the APC.

#### Sea Swell and Ship Heave

Even when weather conditions were excellent on site, a swell from the northwest produced ship heave that often exceeded 2 m at the shelf sites. The 2-m limit is an ODP safety guideline for drilling in 300-650 m water depth, but also proved to be a limit in terms of core quality and risk to equipment. Several times the heave was large enough to place the drill string under compression and displace the pipe several inches upward at the drill floor elevators while connecting pipe joints. The swell, while frustrating, was not unexpected. Operations during Leg 113 and GEOSAT wave height measurements suggested that swells of 3-4 m could be expected roughly 30% of the time.

In order to make the most productive use of available time, an additional site (designated APSHE 5.5) was approved in one of the smaller drifts at the foot of the continental margin, while waiting for sea conditions to improve on the shelf. In less than 2 days, a single hole was APC-cored to 142.7 mbsf and extended by XCB drilling to 217.7 mbsf with 99.1% recovery. Having recovered the shallow section at Site 1101, and seeing improving sea conditions, the ship then returned to shelf Hole 1100D.

#### Lower Guide Horn

The lower section of the guidehorn was damaged during Leg 177, which resulted in a new set of operating constraints for Leg 178. Fortunately, weather conditions were very good during Leg 178 and we never exceeded the pitch and roll limitations while coring. Thus, the loss of the lower guidehorn did not impact our leg.

#### Coring Operations

Nozzles on the XCB bit became clogged with clay and small dropstones during coring in Hole 1096B, which reduced recovery and eventually forced us to clean the bit and proceed to a new hole. Similarly, the RCB bit became clogged in Hole 1097A. In this case, a "swab cup" was used to drain water from the top 300 m of the pipe, which reduced the pressure at the bit and forced fluid back up the bit nozzles, clearing the blockage.

Dropstones and rocks within the diamicts reduced core recovery by blocking the entry of softer sediment at the core catchers and at the throat of the bit.

#### **Leg 179 - Hammer Drill System Test and NERO ION Site**

Two of the three containers shipped to Cape Town for this heavy equipment leg were diverted by the shipping line, and when this error was discovered these containers could not meet the ship in Cape Town. The errant cargo was located in La Spezia, Italy, off-loaded, air freighted to Reunion Island and shipped by boat to the *JOIDES Resolution* on station on the Southwest Indian Ridge. Due to heavy weather, only a partial transfer was made and the remainder returned to Reunion for forwarding to the Leg 180 Port Call in Darwin.

Results of the hammer drill tests are described below under "Hard Rock Reentry System". In addition to hammer drill tests, Leg 179, drilling in the same area on the Southwest Indian Ridge as Site 735, recovered a nearly complete (118 m) section of gabbro, olivine gabbro and abundant oxide gabbro out of the 143 m section cored at Site 1105A. This raises the possibility of both reconstructing a

detailed oceanic cumulate section and making detailed correlations with Hole 735B, 1.3 km away. We also obtained the first high quality FMS logging data in a gabbroic borehole that appears to show significant structure and layering. Drilling and casing at the NERO site for future emplacement of a seismic station was accomplished successfully, despite inclement weather and sea conditions.

### **Leg 180 - Woodlark Basin**

The lateral variation from active continental rifting to seafloor spreading within a small region makes the Woodlark Basin an attractive area to investigate the mechanics of lithospheric extension. Leg 180 was planned to drill a transect of three sites just west (ahead) of the spreading tip: ACE-9a on the down-flexed northern side of the rifting zone; ACE-8a through the rift basin sediments, the low angle normal fault zone, and into the footwall; and ACE-3c near the crest of the footwall block (Moresby Seamount). Site ACE-8a was the primary site, with drilling planned to reach 1200 mbsf. In anticipation of unstable hole conditions, an extensive casing program was planned. Unfortunately the pilot hole drilled at ACE-8a (Site 1108) showed decreasing C1/C2 ratios below 335 mbsf, and increasing presence of higher hydrocarbons below 391 mbsf. Site 1108 was terminated at 495 mbsf for safety reasons, with no hope of reaching the objective.

In consultation with ODP/TAMU and the PPSP, all of whom had access to the site survey data, approval was given to attempt to establish an alternative site south and west of Site 1108, where it was hoped the low angle fault plane was closer to the seafloor, and the overlying sediment dipped south, into the fault, reducing the possibility of accumulated hydrocarbons. In locating this alternate site, we faced several problems: talus at the foot of the slope of Moresby Seamount and throughout the sediment (talus) pond in the west (Sites 1110 & 1111), which includes uncompacted sand aquifers circulating seawater; hydrocarbon generation at depths >485 mbsf in the east (Site 1108); and increasing depth to the 25\_-30\_ low-angle fault target as the ship moved north, away from Moresby Seamount and its talus. At the time of writing, a successful hole had still not been established.

### **Technology Development**

#### ***Hard Rock Reentry System (HRRS)***

Sea trials of a percussion hammer, various types of bits, a casing suspension system, and a casing shoe were to be conducted on Leg 179 on the Southwest Indian Ridge near Site 735B. Due to the missing freight, the hammer tests were phased to allow the freight with extra hammer bits to arrive at the ship. An offset hole was cored at 735B while waiting for the equipment to arrive at the ship. The hammer performed well, but the heave effects of the ship on the hammer will require the valve body to be redesigned to eliminate a failure mode in the hammer due to probable pressure transients created by the heave. The bits used during this initial test were a retractable bit design that allows a large diameter hole to be drilled when casing is used. The retractable bits are a relatively new design that had been tested on a fixed platform in igneous rock, but performed poorly in the heavy seas at 735B and their failure mode needs to be assessed. After successfully transferring three additional bits, the hammer and a proven crown drilling bit achieved 8 m of penetration in 1.6 hrs even though the hammer was being operated at 1600 vs 2200 psi, due to excessive heave. While correcting a standpipe leak, with the hammer and bit pulled off bottom, a crossover sub below the drill collars failed, and the hammer and bit were lost in the hole on the last test. The premature failure of the retractable bits, the failure of a valve within the hammer, and the failure of a crossover sub can all be attributed to the severe heave conditions experienced by the *JOIDES Resolution* during the hammer tests, with the hammer rising off bottom and then banging into the bottom on a regular basis. The results from Leg 179 will be interpreted to evaluate the system for service readiness in preparation for additional operational tests in FY99.

#### ***Active Heave Compensation (AHC)***

As reported to EXCOM in January 1998, RETSCO was identified as the preferred bidder to upgrade the passive heave compensation system on board the *JOIDES Resolution* to an active heave system based on bid documents submitted in the Fall of 1997. In January of this year, questions about the technical robustness of their plan to activate the *JOIDES Resolution's* passive heave compensation system, as well as a question about the propriety of the software that drives the RETSCO active heave system, resulted in a request to RETSCO to respond to technical and software patent questions.

RETSCO failed to respond to this request in a timely fashion and the AHC will be rebid. The target for system installation will be at the FY99 August drydock.

**INFORMATION SERVICES**

Recruiting is presently underway for a new Manager of Information Services, to fill the vacancy created by Russ Merrill's departure.

The JANUS system continues to work well and the operational aspects are becoming smoother with each leg as the shipboard MCSs gain experience. (For further details on JANUS are given in web site)

**PUBLICATION SERVICES** see TAMU web site

### Appendix C SSP Membership list

Member	Appoint. Date	Rotation Date	Last meeting for the member & SSP Discus.	Suggestion to SCICOM
Anselmetti, Falvo, EC, SWTZ	July 98	July 2001	Feb 2001	March 2001
Christeson, Gail, USA I	March 97	Feb. 2000	July 99	Aug. 99
Diebold, John, USA) I (Chair)	Feb. 99	Feb. 2002	July 2001	Aug. 2001
Driscoll, Neal, USA I,E	Feb. 98	Feb. 2001	July 2000	Aug. 2000
Enachescu, Michael, Ind. Canada I (extended one yr.)	April 95	Feb. 2000	July 99	Aug. 99
Flood, Roger, USA E (extended one yr.)	July 95	July 2000	Feb. 2000	March 2000
Hine, Albert, USA E	Feb. 98	Feb. 2001	July 2000	Aug. 2000
Kleinrock, Martin, USA I	July 98	July 2001	Feb. 2001	March 2001
Kuramoto, Shin'Ichi, Japan I	July 98	July 2001	Feb. 2001	March 2001
Lyle, Mich, USA E	July 98	July 2001	Feb. 2001	March 2001
Meyer, Heinrich, Germany I	July 98	July 2001	Feb. 2001	March 2001
Paull, Charles, USA I,E	July 95	Feb. 99	<b>July 98</b>	Aug. 98
Sibuet, Jean-Claude, France (two yrs. extension) I	March 97	Feb. 99	<b>July 98</b>	Aug. 98
Silver, Eli, USA I	Feb. 98	Feb. 2001	July 2000	Aug. 2000
Srivastava, Shiri, Canada ACKT ---- Chair I	April 95	July 99	<b>July 98</b>	Aug. 98
Whitmarsh, Robert, UK I	Feb. 98	Feb. 2001	July 2000	Aug. 2000

For US members USSAC wants to advertise for the replacement positions as early as possible (like six months before replacement). I --- ISSEP, E----ESSEP. Terms of appointments for all members after 1997 is 3 years.

Number of members to retire after July 98 -----3  
 ----- do ----- Feb. 99 -----0  
 ----- do ----- July 99 -----2  
 ----- do ----- Feb. 2000 -----1  
 ----- do ----- July 2000 -----4  
 ----- do ----- Feb 2001 -----5

## Appendix D

### SSP Feedback to proponents

Watchdogs should send a letter to the lead proponent of the proposal. For proposals where the usual watchdog was not at the meeting, the acting watchdog prepares and sends the letter, with a copy to the permanent watchdog. In either case, in the letter you should identify yourself as writing in your role as SSP watchdog (or acting watchdog). **For scheduled legs the letter will be sent by Dan Quoidbach in consultation with the watchdog.** If Co-Chiefs for this leg have been named and are not the leading proponent, send copies of the letter and the enclosure to Co-Chiefs as well. The letter should convey the sense of the discussion, plus any additional informal advice or insight you may have to help the proposal/proponent progress through the ODP approval process. With the letter, you should enclose a copy of the section of the draft minutes dealing with the proposal, plus the SSP worksheets (if any) that you filled out for the proposal. Finally, you should send a copy of the letter to the ODP Data Bank, attention Milly Giarratano.

List of things to include:

- the name and contact information of the watchdog,
  - a copy of the section of the draft minutes dealing with the proposal,
  - copies of the SSP worksheets, if the data package is sufficiently mature to enable the watchdog to fill out worksheets.
  - the target types within the SSP guidelines against which each site will be evaluated,
  - for each data type classified as "X\*" or "Y\*", an indication of whether SSP will or will not require this particular data type for these particular sites,
  - an indication of additional data types that SSP might require in support of secondary or non-standard drilling objective in circumstances not well covered by SSP guidelines,
  - an indication of any potential safety issues,
  - for sites in areas of hydrocarbon exploration or production, a reminder that data from commercial wells in the area will eventually be needed for safety review
  - for sites in <200m water depth, a reminder of shallow water drilling hazard survey requirements
  - for sites in heavily traveled areas or near shore sites, a reminder that information on potential manmade hazards (cable routes, dump sites) will be needed for operational planning by TAMU
  - advice on other investigators who may have relevant data in the region,
  - advice on survey ships that may be able to visit the area.
  - reminder of timing of next data deadline and next SSP meeting.
  - mention about the need to place suitable markers if a HRGB is planned to be used and that the proponents should be in contact with TAMU engineers, in particular with Jay Miller, about it. Enclose a copy of the guidelines on marking these sites using submersibles as outlined by Jay Miller from TAMU.
- Send a copy of your watchdog letter to Milly Giarratano, ODP Data Bank as well as to SCICOM designated watchdog.
- Send the watchdog letter to the lead proponent of the proposal. Ask SSP Chair for advice if there is not a single obvious lead proponent with whom to communicate or any other matter
- Send a copy of "Quantitative Classification of proposals" with your letter.

## Appendix E

### Quantitative Classification of proposals Site Survey Readiness Classification Scheme.

#### 1. Presently viable proposal for FY 2000 drilling.

- 1A. All required data are in the data bank

- 1B.** A few required items are missing from the data bank, but data are believed to exist and to be readily available.
- 2. Possibly viable proposal for FY 2000 drilling; likely for FY 2001**
- 2A.** Substantial items of required data are not in the data bank but are believed to exist and are likely to be available in time for consideration for FY 2000 drilling schedule.
- 2B.** Substantial items of required data are not in the data bank, not believed to exist but could be available in time for consideration for FY 2000 drilling if a **scheduled** site survey proceeds as planned.
- 2C.** Substantial items of required data are not in the data bank, not believed to exist but could be available in time for consideration for FY 2000 drilling if a **proposed** site survey proceeds as planned.
- 3. Unlikely for FY 2000; possible for FY 2001.**
- 3A.** Required data are not in the data bank, not believed to exist but are likely to be available in time for consideration for FY 2001 drilling if a **scheduled** site survey proceeds as planned.
- 3B.** Required data are not in the data bank, not believed to exist but could be available in time for consideration for FY 2001 drilling if a **proposed** site survey proceeds as planned.
- 4. Impossible for FY 2000:** Required data are not in the data bank and not believed to exist. Data could be available after FY 2000 if a **proposed** site survey proceeds as planned.
- 5. Impossible for FY 2000 :** Required data are not in the data bank and not believed to exist. A site survey needs to be conducted but is not proposed at this time.
- 6. Not considered** because data in the Data Bank does not match present proposal; awaiting a new proposal.
- 7. Not considered** because no data has been submitted to the data bank.

### Appendix F SSP Ranked proposals

Site Survey readiness classification of proposals considered, July 98									
	1. Viable for 2000		2. Possibly viable for 2000; likely for 2001			3. unlikely for 2000; possible for 2001		4. Imposs. for 2000	5. Imposs. For 2000
Type	1A	1B	2A	2B	2C	3A	3B		
<b>I S S E P</b>	431B WP1	431B WP2							
	445								
			448*						
	450***								
	451								
	463								
	479*								
	499								
				500*					
<b>E S S E P</b>			504**						
			455**						
		465							
						482***			
	485								
	486								
		489***							
		490*							
			503**						
					510***				
		534*							

\*\*\* ---- PPSP preview will be required; \* ---- see comments minutes. \*\* ---- data problem.