

JOIDES SITE SURVEY PANEL MEETING

July 19 - 21, 1999

Lamont-Doherty Earth Observatory

Members: Diebold, John (*LDEO, NY, USA*) -- Chair
Anselmetti, Flavio (*ESF*)
Christeson, Gail (*UTA, USA*)
Driscoll, Neal (*WHOI, USA*)
Enachescu, Michael (*Husky, Canada*)
Hine, Albert (*USF, USA*)
Lyle, Mitchell (*BSU., USA*)
Meyer, Heinrich (*BGR, Germany*)
Sibuet, Jean-Claude (*France*)
Silver, Eli (*UCSC, USA*)
Yao, Bochu (*GMGS, China*)

Liaison: Allan, James (*NSF, USA*)
Warner Brueckmann (*JOIDES Office*)
Klaus, Adam (*ODP/TAMU*)
??Hodell, David (*SCICOM/OPCOM*)
Quoidbach, Daniel (*ODP Data Bank*)
Ball, Mahlon (*PPSP*)

Apologies:
Holbrook, Steve (*UWYOM, USA*)
Kleinrock, Martin (*VU., USA*)
Kuramoto, Shin'Ichi (*GSI, Japan*)
Soo Cheol Park, (*PACRIM*)
Whitmarsh, Robert (*SOC, UK*)

4. SITE SURVEY STATUS OF UPCOMING SCHEDULED LEGS FOR 99 & 00

4.1 Leg 187: Australian-Antarctic Discordance, 426 Ready - No change

4.2 Leg 188: Prydz Bay Glacial History, 490

New sites correlated with the data. Alternate sites are far enough away. SSP recommends that JR shoot SCS coming into sites lacking crossing lines. **DB still needs digital navigation**

4.3 Leg 189: Southern Gateway, 485

A new crossing line submitted to the DB. **DB needs Shotpoint nav for seismic lines**

4.4 Leg 190: Nankai, 445

Ready for drilling. SSP recommends that Enachescu be given access to 3D data after drilling, to evaluate usefulness of academic 3D data for future Riser drilling.

4.5 Leg 191: WP-ION, 431B WP2 (Christeson) Ready - no change (see below)

Western Pacific Geophysical Network: WP-2

Proposal #: Leg 191

Target Type: E

SSP Watchdog: Christeson

SSP Proponent(s):

SSP Review: This leg will drill one site into basement in the western Pacific in order to install a broadband ocean seismometers as part of the Ocean Seismic Network. 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. A survey ship track with shot points annotated needs to be submitted to the data bank.

SSP Consensus: This proposal seeks to drill one site into basement in the western Pacific in order to install broadband ocean seismometers. All required data has been submitted to the data bank for this site with the exception of a survey ship track with annotated shot points. It is suggested that site WP2 be moved 100 CDP values to the left where basement is better imaged.

4.6 Leg 192: Manus Basin, 479

Some heat flow data are in DB. Dive videos have been reviewed and are OK – **Ready to go**

4.7 Leg 193: Ontong Java, 448

Migrated sections have been submitted, with annotated sonobuoy velocities, some of which are ambiguous. Also a rationale for basement picks, including mis-identification of correlation with seismic and previously drilled site. **SSP still need to see buoy records.** (see below)

Assessing the origins, age and post-emplacement history of the Ontong Java Plateau through basement drilling

Proposal #: Leg 193

Target Type: D,E

SSP Watchdog: Christeson for Whitmarsh

SSP Proponent(s):

SSP Review: This leg will drill 4 sites in the Ontong Java Plateau to determine the age and duration of emplacement of the plateau, and range and diversity of magmatism. A substantial amount of data in support of this leg has been submitted to the data bank.

At the Summer 1999 SSP meeting the panel examined the migrated data for all sites. The panel continues to have concerns about basement identification. For most sites the proponents have picked basement as the top of a rough reverberant reflection. However, at sites OJ7D and OJ7E, the basement picks coincide with a strong smooth reflection about 0.45 s twt below the top of the rough reverberant reflection. Misidentification of basement will result in incorrect drilling time estimates, so SSP feels it is important to explain why different events are picked as basement at different sites.

SSP would also like available sonobuoy data collected near the sites to be deposited in the data bank. Sonobuoy 31 near site OJ-3B encounters a change from 3.2 to 4.8 km/s at about 3.5 s twt, which would place basement below the rough reverberant layer. Mike Coffin argues that the structure encountered by the sonobuoy is more representative elsewhere on the profile due to changes in seafloor depth. Direct water waves recorded by the sonobuoy can be used to determine if the sonobuoy had substantial drift, and the seafloor reflection can be used to help model 2D structure. A more detailed analysis of the sonobuoy data should be able to confirm basement depth. Sonobuoy 17 near Site OJ-11C also places basement deeper than the reverberant layer.

In addition, SSP suggests that the proponents use sonobuoy data, where available, for sediment thickness calculations. These should be more accurate than stacking velocities determined from a 1200 m streamer.

SSP Consensus: This leg will drill 4 sites in the Ontong Java Plateau to determine the age and duration of emplacement of the plateau, and range and diversity of magmatism. SSP still has concerns about basement identification in this region, and questions why basement is picked as the rough reverberant reflector for some sites and about 0.45 s twt below the reverberant reflector at other sites. SSP would also like the sonobuoy 17 and 31 data deposited in the data bank; the sonobuoy data appears to place basement deeper than the reverberant reflector, although at one site the proponents argue that the sonobuoy 1D modeling is affected by 2D structure.

5. POTENTIAL FUTURE DRILLING

5.1 355 – Full7:

Gas Hydrates on Convergent Margins: Distribution of BSR's Methanogenesis, and Properties

Proposal #: 355 – Full7

Target Type: C

SSP Watchdog: A.C. Hine

SSP Proponent(s) None

SSP Review: SSP determined that this proposal requires data under Target C and encourages the proponents to familiarize themselves with this listing. We found the proposed *Sonne* site survey cruise to be somewhat vague concerning the type of seismic reflection data to be collected. High resolution seismic reflection in a closely tied grid over each site coupled with good velocity data are highly recommended. We found that most of the emphasis was on Sites GHPER-01a to 04a with little explanation for justification for the other sites GHPER-5a to 07a. The SSP anticipates receiving a complete data package by July 1, 2000 for this proposal to be considered for the 2001 drilling schedule. We realize that this is a very tight deadline considering that the end of the proposed site survey cruise is May 2000. We wish the proponents a successful cruise and look forward to reviewing their site survey cruise results.

SSP Consensus: Target type C; all appropriate data in ODP Data Bank by July 1, 2000 for 2001 drilling consideration--otherwise consideration will have to be slipped to 2002. SSP also felt it was necessary to receive more guidance from the gas hydrate PPG in defining data requirements for gas hydrate type proposals.

Site Survey Readiness Classification: 2B

5.1a 450: Taiwan arc-continent collision **PPSP review** previously rated 1A

5.1b 451: Tonga Forearc previously rated 1A

5.2 455 Rev3

High Resolution Transects of Laurentide Ice Sheets Outlets

Proposal #:455-Rev3

Target Type: A/B

SSP Watchdog: F. Anselmetti

SSP Proponent(s): None

SSP Review: The panel acknowledges the receipt of an extensive data package consisting of well-annotated seismic lines, 3.5 kHz sections, navigation data and an extensive set of core description for Sites HUD01A-HUD07A and LAW02A-LAW05A. These data significantly increase the quality of the site survey data for these sites and complete the data package.

No new data has been submitted for Sites HUD08A, LAW01A and LAW06A, so that some data are still missing for these sites.

The panel also acknowledges the proponents feedback regarding previously issued concerns for some of the proposed drillsites. It seems reasonable to reduce the proposed target depths of Site HUD04A to an amount that can be seismically imaged, particularly if scientific objectives are likely to be met with a smaller depth of penetration. The proponents mention an ongoing cruise to collect 30-50 m cores at some of the sites. The results of this campaign will yield information which will possibly eliminate Sites HUD08A, LAW01A and LAW06A as primary targets. After completion of this cruise, the panel would like to see a clear drilling strategy, in particular a plan documenting primary and alternate sites, as well as information stating which sites are removed from the proposal.

The newly submitted data for HUD01A-HUD07A and LAW02A-LAW05A complete the data package so that, for these sites, the site survey readiness status can be raised to 1A. No new data for Sites HUD08A, LAW01A and LAW06A have been submitted, so that the status for these sites remains 2A.

We encourage the proponents to submit the newly collected data and a revised drilling strategy indicating primary and alternate sites by the February 1 deadline, in order that these items can be considered at the next SSP meeting in February 2000.

SSP Consensus: New seismic and core data have been submitted for Sites HUD01A-HUD07A and LAW02A-LAW05A, so that these sites are now well-covered in the data bank with a complete package resulting in a site survey readiness classification of 1A. The status of Sites HUD08A, LAW01A and LAW06A, which might be withdrawn from the proposal depending on the outcome of a planned coring campaign, remains 2A. We encourage the proponents to submit the newly collected data and a revised drilling strategy indicating primary and alternate sites by the February 1 deadline, so that these items can be considered at the next SSP meeting in February 2000.

Site Survey Readiness Classification: 2A/1A

5.2a 465: SE Pacific Paleoceanography

Previously rated 1A

5.3 477 – Full2:

The Okhotsk and Bering Seas: High resolution Plio-Pleistocene Evolution of the Glacial/Interglacial Changes in the Marginal Seas

Proposal #: 477 – Full2

Target Type: A; Paleoenvironment

SSP Watchdog: Diebold

SSP Proponent(s): none

SSP Review: A large number of sites have been located along single channel profiles of varying, but adequate quality. The corresponding profile segments and navigation have been submitted to the ODP Data Bank [DB] for most, but not all sites. No sites have crossing lines, which are usually required to adequately locate sites of this type. No 3.5 KHz or sediment core descriptions, also required, have been submitted to the DB. The proposal states that data from a partial Joint Russian/German cruise are being processed. Another KOMEX cruise is scheduled for the Okhotsk Sea, and a Japanese cruise will take place in the Bering Sea summer 1999. The proponents are encouraged to submit remaining existing data to the DB and to obtain the necessary remaining data during those site surveys, and deposit the results, properly annotated with site locations, target depths, horizontal and vertical scales, etc, as quickly as possible.

SSP Consensus: It is known that essential data required to characterize the proposed sites do not exist, but may be obtained during scheduled 1999 site survey cruises.

Site Survey Readiness Classification: 3A

478 – Full4:

Characterization of Eastern Nankai Subduction Processes

Proposal #: 478

Target Type: C (active margins)

SSP Watchdog: Eli Silver

SSP Proponent(s): None

SSP Review: The Tokai thrust sites (TOK1 and TOK2) are focused on examination of fluid flow behavior and fluid compositions along an out-of-sequence thrust fault that appears to root in the decollement. A prime justification for these sites is eventual monitoring of fluid behavior during an earthquake cycle. SSP is concerned that the seismic data (JapexS-2) is inadequate to clearly image the structural relations between the Tokai thrust and the decollement, and also the relations between the Tokai thrust and the BSR. Cross lines are essential for these sites and these do not exist. Excellent side scan, gravity and magnetic data exist, as well as swath bathymetry. Our rating for this data set is based on the lack of adequate seismic data at present in the ODP data bank.

The Frontal Thrust Zone sites (1-4) are based apparently on one profile (29), a migrated, single channel line. As with the Tokai data, lack of crossing lines presence of only one dip line render the data set in the data bank inadequate for the proposed program. We understand that there are plans to carry out 3D seismic acquisition and also OBS arrays. It is not clear to us where this study will occur and when the results are planned to be sent to the data bank. Such data could greatly improve our assessment of this proposal.

Finally, data is indicated on the SSP review forms that do not occur in the databank. These data include “parallel high resolution MCS lines 901-915, spaced at 1.5 km.” SSP would appreciate knowing the disposition of these data and receiving copies in the databank.

SSP Consensus: Both the Tokai thrust and Frontal Thrust Zone regions are inadequately covered by high quality seismic lines and no site has a crossing line. This situation must be remedied before this rating can be improved. We look forward to seeing the results of the upcoming 3D seismic reflection and OBS acquisition program that appears to be planned for the year 2000.

Site Survey Readiness Classification:

3A

5.3a 482: Wilkes Land Margin

Previously rated 3B

5.3b 486: Paleogene Equatorial Pacific APC transect
rated 1A

Previously

5.3c 489: Ross Sea, Antarctica
rated 2A

Previously

5.3d 499: ION Equatorial

Previously rated 1A

5.4 500

Drilling fast spread Pacific crust at the H2O long term seafloor observatory

Proposal #: 500

Target Type: E

SSP Watchdog: Christeson

SSP Proponent(s):

SSP Review: This proposal is for drilling a reentry hole at the Hawaii-2 Observatory (H2O) site in the Eastern Pacific; a broadband seismometer will be installed within the hole as part of the worldwide ION program. Since the last (Feb 1999) SSP meeting the proponents have submitted single channel seismic reflection data on 2 profiles near the H2O junction box, and a navigation plot with track line locations. Basement identification on the SCS data is difficult, and the panel requires 3.5 kHz profiles to assist in sediment thickness assessment. No site has been chosen yet for the drill hole.

The panel requires the following from the proponents: 1) a primary and alternate site location, 2) 3.5 kHz data over the sites, 3) SCS data with the sites (primary and alternate) clearly marked.

SSP Consensus: This proposal is for drilling a reentry hole at the Hawaii-2 Observatory (H2O) site in the Eastern Pacific; a broadband seismometer will be installed within the hole as part of the worldwide ION program. The panel requires the following from the proponents: 1) a primary and alternate site location, 2) 3.5 kHz data over the sites, 3) SCS data with the sites (primary and alternate) clearly marked. SSP suggests that the upcoming Chave cruise to the area collect crossing 3.5 kHz profiles over the sites.

Site Survey Readiness Classification: 2A – [2B ??]

503 – Full2:

Weddell Sea: Cenozoic History of the East Antarctic Ice Shield and the Evolution of the Restricted Mesozoic Weddell Basin

Proposal #: 503-Full2

Target Type: B/D

SSP Watchdog: F. Anselmetti

SSP Proponent(s): None

SSP Review: The panel acknowledges the receipt of new Parasound lines for Sites WS07A-WS08B and general velocity information. The panel also would like to see the 3.5 kHz record of Sites WS05A and WS06A, even if data quality is low, as it was mentioned by the proponents.

The panel acknowledges also the proponents response to concerns issued in previous statements. We fully encourage the proponents to choose alternate sites for WS04A, which might recover a thicker drift succession and which therefore will be scientifically more valuable, even if they have a greater risk of difficult ice conditions or a greater probability to encounter more sandy lithologies. Together with the primary sites located at more safe locations, these additional sites closer to the ice edge and in the drift deposits around Polarstern Bank will make the drilling strategy most efficient and flexible to retrieve best scientific results while keeping the risk at a minimum. These alternate sites could be picked using the existing extensive seismic dataset. In addition, the panel argued whether primary site WS04A should be moved slightly towards the South along Line 92-020 (by approximately 20 km) in order to avoid its actual unfavorable location on that seismic profile.

Since new data has been submitted and most concerns of previous reviews were discussed by the proponents, the site survey readiness classification is changed to 1B. Few items, however, such as some crossing seismic lines and digital navigation data, are still missing. We encourage the proponents to submit these data and the additional alternate sites till the February 1 deadline, so that these items can be considered during the next SSP meeting in February 2000.

SSP Consensus: New Parasound sections were submitted to the data bank. The panel encourages the proponents to select additional alternate sites for WS04A, even closer to the ice edge and in the drifts around Polarstern Bank. We also encourage the proponents to submit the missing items in the data bank till the February 1 deadline, so that these items can be considered during the next SSP meeting in February 2000.

Site Survey Readiness Classification:

1B

505 – Full3

Mariana convergent margin: Geochemical, tectonic, and biological processes in the intermediate depths of an active subduction factory

Proposal #: 505

Target Type: C

SSP Watchdog: Christeson

SSP Proponent(s):

SSP Review: This is a proposal to drill three serpentine mud volcanoes on the forearc of the Mariana system in order to ascertain the spatial variability of slab-related fluids within the forearc system. 2 sites are planned for each volcano, for a total of 6 sites. No data has been submitted to the data bank.

Since no data was submitted, it was impossible for SSP to evaluate the adequacy of the existing data. 3.5 kHz data is required over all sites, and this data is believed to exist (although it is not known whether the profiles run exactly over the sites). Below are specifics for the sites.

MAF-2B, MAF-3B, Pacman seamount. These sites are to drill 50 m of unconsolidated mud flows and 349 m of serpentinized peridotite. How do the proponents know that there is 50 m of mud flows? No reflection lines go over the sites. Drilling at site MAF-3B is planned to intersect a fault at depth – without reflection data how can the fault be defined? If drilling through this fault is a primary objective the current data appears to be inadequate. Also, no logging is planned for these holes – wouldn't logging be preferred at site MAF-3B to aid fault identification?

MAF-4B, MAF-8A, S. Chamorro seamount. Site MAF-4B is planned for the summit knoll, to drill 400 m of serpentine mud flows. Site MAF-8A is on the north flank, with drilling of 600 m of mud flows and 100 m of basement. Without access to the reflection profile the SSP could not determine if the data was adequate to determine basement depth. Is reaching basement a primary objective of this site? How were velocities determined? Crossing lines are normally required for drilling to basement with these sediment thicknesses, and crossing lines do not exist at this site. SSP would consider relaxing this requirement if the proponents can show from the existing reflection profiles that basement is simple enough in this region.

MAF-9A, MAF10A, Celestial seamount. The strategy at these sites is the same as for S. Chamorro seamount, and thus SSP has the same concerns. Reflection profiles that adequately image basement are necessary for drilling; since no data has been submitted to the data bank the SSP cannot determine if the existing data is adequate.

SSP Consensus: This is a proposal to drill six sites on three serpentine mud volcanoes on the forearc of the Mariana system in order to ascertain the spatial variability of slab-related fluids within the forearc system. No data has been submitted to the data bank. The SSP had the following concerns: 1) Does 3.5 kHz data exist at each site? 2) At Pacman seamount, how can the proponents determine that there is 50 m of serpentine mud flows overlying serpentized peridotite? There does not appear to be any reflection profiles over the sites. Also, drilling through a fault at depth is an objective of one of the sites, but SSP could not understand how this site could be characterized without reflection data. 3) At Celestial and S. Chamorro seamounts there are sites with an objective to drill through 600 m of mud flows and 100 m of basement. These sites require reflection data that adequately image the basement – the existing data may or may not be adequate. The proponents also need to explain how sediment velocities, and therefore the 600 m mud flow thickness, were determined. Also, crossing lines are required for drilling into basement with these sediment thicknesses. SSP could relax this requirement if the proponents can show from the other flank crossings that basement topography is simple in this region. 4) Navigation with reflection profiles, site locations, and 3.5 kHz lines needs to be submitted. Both paper plots and digital format is preferred.

Site Survey Readiness Classification: 7

510 – Full3

Sea-level magnitudes and variations recorded by continental margin sequences on the Marion Plateau, northeast Australia

Proposal #: 510-Full 3

Target Type: B

SSP Watchdog: Hine

SSP Proponent(s): Anselmetti

SSP Review: The SSP was impressed with the high quality of the data package submitted to the ODP Data Bank particularly given the fact that the recent site survey cruise ended just 2.5 months before the late July 1999 SSP meeting at Lamont. We encourage the proponents to complete their intended processing of the key seismic lines and to submit their velocity data. All other required data are in the data bank. We hope that the diamond coring system recently tested on land by ODP be available on the JR to drill into MP-2 and MP-3 platforms should this proposal be scheduled for drilling. We wish the proponents good luck in securing a scheduled leg.

SSP Consensus: Submit velocity data, then proposal will be rated 1A.

Site Survey Readiness Classification: 1B

517 - Full

Nankai Trough LWD/Advanced CORK experiments

Proposal #:517

Target Type: C

SSP Watchdog: Jean-Claude Sibuet

SSP Proponent(s): K. Becker

SSP Review: The aim of this proposal is principally to justify LWD and installation of Advanced CORK experiments at 3 sites already cored or planned to be cored during leg 190 on the eastern transect of western Nankai Trough.

All data have been acquired (MCS data, swath bathymetry data, refraction data, magnetic, gravity and heat flow data). In addition a 3D MCS survey is underway for both leg 190 and this proposal.

Data are presently in the DB for leg 190. However, we suggest to put the results of the refraction and 3D surveys in the DB before February 1, 2000 for possible drilling in 2001.

SSP Consensus: The aim of this proposal is principally to justify LWD and installation of Advanced CORK experiments at 3 sites already cored or planned to be cored during leg 190 on the eastern transect of western Nankai Trough.

All data have been acquired (MCS data, swath bathymetry data, refraction data, magnetic, gravity and heat flow data). In addition a 3D MCS survey is underway for both leg 190 and this proposal.

Data are presently in the DB for leg 190. However, we suggest to put the results of the refraction and 3D surveys in the DB before February 1, 2000 for possible drilling in 2001.

Site Survey Readiness Classification: 1A

519 - Full2

The Last Deglacial Sea-Level Rise in the South Pacific: Offshore Drilling in Tahiti (French Polynesia) and on the Australian Great Barrier Reef

Proposal #:519

Target Type: B

SSP Watchdog: Neal Driscoll

SSP Proponent(s): NA

SSP Review: The proposed drilling will use the Portable Remotely Operated Drill (PROD) in conjunction with submersible (JAGO) observation and mapping, downhole measurements and high resolution seismic profiles in Tahiti and the Great Barrier Reef to reconstruct the deglaciation curve for the period of 20,000-10,000 years BP. The water depths for the proposed sites range from 50-300 m and are not accessible to the JOIDES Resolution. The proponents state that the required site survey data will be collected (boomer, multi-electrode sparker, and 10 cubic inch airguns). At present, no data have been submitted to the data bank. Given the shallow water targets, the proponents need to adhere to the ODP site survey requirements for shallow water drilling. Furthermore, it is not clear why the proponents propose to penetrate hundreds of meters into the underlying basement in light of the sea-level objectives. Finally, can PROD actually penetrate 400 m subsurface??

SSP Consensus: Advice to SCICOM regarding readiness to drill: Impossible for FY2001 – 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.

Site Survey Readiness Classification: 5

5.5 520 - Full3

Continental crust formation in the western Pacific: Drilling at the Kyushu-Palau Ridge

Proposal #: 520

Target Type: G

SSP Watchdog: Jean-Claude Sibuet

SSP Proponent(s): Y. Ohara et al.

SSP Review: The aim of this proposal is to drill tonalitic rocks on the Kyushu-Palau Ridge. These rocks are supposed to be early constituents of the Archan continental crust. Data have been acquired (MCS data along one line, swath bathymetry data, refraction data, magnetic and gravity data).

However, no data have been sent to the DB. For possible drilling in 2001, data might be submitted before February 1, 2000 for examination by the SSP. In particular, 3.5 kHz data and clear copies of the MCS profiles (of better quality than the profile shown in the proposal!) must be provided.

SSP Consensus: The aim of this proposal is to drill tonalitic rocks on the Kyushu-Palau Ridge. These rocks are supposed to be early constituents of the Archan continental crust.

Data have been acquired (MCS data along one line, swath bathymetry data, refraction data, magnetic and gravity data).

However, no data have been sent to the DB. For possible drilling in 2001, data might be submitted before February 1, 2000 for examination by the SSP. In particular, 3.5 kHz data and clear copies of the MCS profiles (of better quality than the profile shown in the proposal!) must be provided.

Site Survey Readiness Classification: 7

521 – Full4 PPSP preview.

Himalayan Uplift and the History of the Indian Monsoon Recorded in the Indus Fan

Proposal #: 521-Full4

Target Type: A and secondary B

SSP Watchdog: Michael E. Enachescu

SSP Proponent(s): Heinrich Meyer, BGR; indirect

SSP Review: This proposal consists of one deep hole located in the deep water of the Indus fan (3000m) demanding for 2700m sediment penetration. This well site IF-1 and its alternates (sites 1A and 1B) will core the middle Indus fan to investigate the tectonic and erosional history of western Himalayas and its possible links to the Indian monsoon. Drilling the sites will challenge JOIDES capabilities.

The panel acknowledges the proponents for responding to some of our suggestions and demands expressed at the February 1999 meeting. Since this meeting, sonobuoys profiles on paper, MCS lines pertaining to the IF-1 site and regional heat flow data from vicinity of proposed sites have been received at DB. Most of the Site Survey required data is now in the Data Bank. However some data is missing or needs some refinement work. We insist on timely receiving:

1. better quality displays of the seismic data at the IF-1 location, i.e.: originals rather than scanned copies and lines with consistent scale; revised site information;
2. proposal insert pages containing SP numbers on illustrated seismic lines; also one line labeled SO122-16 in proposal forms and SO122-26 on maps and sections!
3. maps clearly indicating the status of petroleum wells (e.g.: dry and abandoned, oil shows, gas shows, gas well, etc.);
4. correct location of IF-1 on the heat flow information map;
5. logs and geochemical info from the Wintershall Indus Marine A-1 well necessary to assess gas hazard (PPSP will need also this info). Signing by ODP of a Confidentiality Agreement should not be a problem as the data is probably property of the Pakistan government now rather than the oil company's;

Most important, a seismic stratigraphic study and associated maps of the main interpreted sequences are absolute necessary too support the scientific objective of the proposal and allow for regional correlation of markers. It should therefore be received at the DB prior to the final deadline of January 2000, together with all other above-mentioned modified displays. In light of recent major gas discoveries in sandstones of deep-water fans (Angola, Brazil, etc) we persist on taking all the necessary safety precautions while drilling into this sedimentary basin.

SSP Consensus: The SP acknowledges that most of the required data for this type of site is in DB and has been analyzed by the proponents and properly inspected by the panel. All required missing data, display corrections and other submittals should arrive at DB prior to February 2000 meeting. No hazards are identified on seismic lines, but presence of gas should be closely monitored by an on board experienced petroleum geochemist.

Site Survey Readiness Classification: 2A

523 - Full

Motion of the Hawaiian Hotspot During Formation of the Emperor Seamounts: a Paleomagnetic Test

Proposal #: 523-Full

Target Type: G

SSP Watchdog: Diebold

SSP Proponent(s): none

SSP Review: All of the primary sites are at or near previously drilled DSDP and ODP holes. Alternate sites are located according to data ancillary to locating those sites. The Data Bank has so far played the major role in assembling the available data, and single channel data have been located for every site. The one required data type, 3.5 KHz echo sounder profiles, are thought to exist, but Data Bank employees have not yet had the time to find it and make sure. The proponents should take a more active role in doing this work, if possible.

SSP Consensus: Although all of the primary sites have been drilled before, some of them were drilled before the existence of the ODP Data Bank. Therefore the required 3.5 KHz echosounder data for these sites and the alternate sites, while thought to exist, have not been extracted, annotated with site locations, and placed in the Data Bank. When this is done, the proposal will be classified 1A from an SSP point of view. Currently it is classified 2A.

Site Survey Readiness Classification: 2A

5.6 525 - Full

Proposal for Drilling Mantle Peridotite along the Mid-Atlantic Ridge from 14° to 16° N

Proposal #: 525

Target Type: F

SSP Watchdog: Christeson

SSP Proponent(s):

SSP Review: This proposal is for drilling of mantle peridotites along the Mid-Atlantic Ridge from 14° to 16°N, where igneous crust is locally absent and the structure and composition of the mantle can be determined at sites over 100 km along strike. There are 7 primary and 4 alternate sites, all of which are classified as Target Type F: hard-rock drilling. This target type requires the following data types for drilling: swath bathymetry, photography or video over site, rock samples, and navigation. A substantial amount of data has been deposited into the data bank.

Regional swath bathymetry was submitted to the data bank, but it is insufficient for drilling. SSP requests enlarged swath bathymetry maps for each site with the site marked. Dive videos exist for all primary sites and 3 of the 4 alternate sites; however, only the Shinkai videos have been submitted to the data bank at this time and the SSP requests that the Nautilie dive tapes be deposited in the data bank. Descriptions of rock samples for all sites are in the data bank. SSP does request the bathymetric maps with compiled sample locations for all known dredging and submersible cruises that Jack Casey was asked to submit to the data bank. Plots of all dives exist in the data bank; it is recommended that digital navigation of these dives also be supplied. The site survey readiness status of these sites is ranked 2A.

SSP Consensus: This proposal is for drilling of mantle peridotites along the Mid-Atlantic Ridge from 14° to 16°N, where igneous crust is locally absent and the structure and composition of the mantle can be determined at sites over 100 km along strike. A substantial amount of data has been deposited into the data bank. The following data is believed to exist, and is requested for submission to the data bank: enlarged swath bathymetry maps for each site with the site marked, Nautilite dive videos, bathymetric map with compiled sample locations, and digital navigation of Shinkai and Nautilite dives.

Site Survey Readiness Classification: 2A

5.7 534 - FullStill 1B, but very close to 1A.

Exploring extreme warmth in the Cretaceous and Paleogene: a depth transect on Shatsky Rise, Central Pacific

Proposal #: 534-full

Target Type: A/D

SSP Watchdog: Mitch Lyle

SSP Proponent(s): none

SSP Review: The 3.5 kHz data was received for each drillsite. We note that the proponents have added 8 new drillsite locations have been added to the proposal. For the most part they have provided the necessary data for drilling but some items are missing. Most sites do not have crosslines and it is recommended that crosslines be taken by the drill vessel if the leg is scheduled. The proponents have noted that hydrosweep data has been filed with the databank (for proposal 465) and we recommend that the proponents work with the databank to make bathymetric maps at each drillsite. This is especially important for SHAT-13 because it is situated on an erosional slope. The proponents should doublecheck the site locations, especially sites SHAT-4 and SHAT-5. The locations did not plot on the TN-037 trackline on the map provided to the databank.

SSP Consensus: The new data have completed the data packages for most, but not all, of the sites. It is recommended that detailed bathymetric maps be made for each drillsite from the available hydrosweep data. A bathymetric map is required for SHAT-13 because of its location on a relatively steep slope.

Site Survey Readiness Classification: 1B

5.8 535 – Full2

735 Deep: The Nature of the Lower Crust and Shallow Mantle at a Slow Spreading Ridge

Proposal #:535 – Full2

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

SSP Watchdog: H.Meyer

SSP Proponent(s): None

SSP Review: This proposal is to drill a hole immediately adjacent to site 735B up to 3000 m through the gabbroic massifs exposed on the Atlantis Bank in the southern rift mountains of the slow spreading Southwest Indian Ridge. It is intended to obtain a complete gabbro section, determine the crust-mantle boundary and get a section of the uppermost mantle beneath the crust at a slow spreading-ridge.

The site 735B was first established during Leg 118 in a water depth of 731 m and cored to a depth of 500 mbsf. On leg 176 this site was extended to 1508 m.

All site survey data, which were necessary for drilling Leg 118 and Leg 176 were in the data bank. The proposed hole is only a few meters adjacent to the drilled 735B, so no further data are required.

New results from surveys with 'remotely operated vehicles' in 1998 were added to the data bank.

We would like to point out that SSP cannot verify the MOHO and mantle objectives of this proposal from the data in the data bank.

SSP Consensus: All required data for proposal 535 are present in the data bank and the proposal is ready for drilling.

Site Survey Readiness Classification: 1A

5.9 546 - Full:

Drilling hydrates on Hydrate Ridge, Offshore Oregon

Proposal #: 546

Target Type: G and Hydrate

SSP Watchdog: Roger Flood

SSP Proponent(s):

SSP Review: This proposal describes a multi-faceted program to study gas hydrates on Hydrate Ridge (also known as Second Ridge). Three holes are proposed to extend to 600/700 m. One site (HR-1) is in a region of dipping layers where two BSRs are identified on a ridge in a region, one site (HR-2) is in a small sedimentary basin where a BSR is identified in more recent sedimentary fill, and one site (HR-3) in a region of dipping layers adjacent to a possible slump. The proposed sites are within about 10 km of Site 892 drilled on an active vent on Leg 146. Proposed sites here are in a region thought to be characterized by diffuse flow rather than active venting. However, analysis of video transects south of the proposed sites shows small gas vents without bioherms. A number of programs are studying Hydrate Ridge supported by US, Canada and Germany. These studies provide important information to understand fluxes in the region.

The three proposed sites are located on a MCS line collected as part of the Leg 146 site survey. Much of this data is in the Site Survey Data Bank and the proponents have attempted to identify appropriate data from the Leg 146 data set, but this data set was not studied for this meeting. However, processed Leg 146 survey data lines provided for this meeting (spaced about 2 km apart) are not sufficient to characterize the variability in the BSR, double BSR, or reflectivity fronts. Understanding this variability is an objective of the proposal. Swath bathymetry, reflectivity and seismic profiles provided by the proponents show that there is important lateral variability in the structure of the ridge that needs to be understood when final site selection is made. Additional data will be collected in the region of the proposed sites that will resolve this variability. This includes deep-tow side-scan sonar and 4.5 kHz subbottom and Alvin diving in 1999 (PROD sampling will not occur) and a 3-D seismic reflection survey on the southeastern flank of Hydrate Ridge (NSF) and additional high-resolution seismic reflection data (GEOMAR) in 2000. The proponents expect to modify details of the proposed program based on the results from the 1999 surveys and also perhaps on the results of the 2000 surveys.

The sites are classified as Target Type C (penetration to more than a few hundred meters in an active margin), although these sites are selected to study hydrates and thus may need to meet additional data requirements to sufficiently characterize the study region. Existing data in the data bank needs to be updated with the proposed site locations (including lines to target depths), processed versions of all profiles covering Hydrate Ridge need to be provided with sites marked (incl. lines 43 and 44), 3.5 kHz profiles, and digital navigation for all profiles and the provided video tape. Future data requirements will include the 4.5 kHz profiles to be collected near proposed sites, near-bottom side-scan sonar maps, and appropriate results of 3-D and other high-resolution reflection data to be collected in 2000. We feel that analysis of the 3-D seismic survey results will be necessary before refining a drilling strategy and drill sites. If the 3-D survey occurs in mid-late 2000, initial results will not be available in time for data bank submission in July, 2000. Thus we rate this proposal 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 2002 drilling if a scheduled site survey proceeds as plans).

SSP Consensus: Existing data from Hydrate Ridge shows a complex region with venting, near-surface hydrates and carbonates, and variable BSR and deeper reflectivity patterns. Understanding these reflectivity patterns, an objective of the proposed study, will require more closely spaced seismic lines than presently exist. Surveys planned for 2000 will collect additional reflection data in the study area that will allow three-dimensional subsurface variability to be better resolved. The proposal is rated 3A.

Site Survey Readiness Classification: 3A

Monsoonal Variability and Oxygen Minimum Zone Intensity in the Northern Arabian Sea

Proposal #:549 – Full

Target Type: A

SSP Watchdog: Yao Bochu

SSP Proponent(s): None

SSP Review: The proposal is suggesting seven ODP well sites, supported by MCS, high resolution (Parasound, 3.5 KHz) and SCS profiles. Gravity and magnetic data, as well as sediment cores are available from nearby Leg 133 sites. These regional data are described in the proposal, and are present in the Data Bank, but without digital navigation or adequate track maps. Some seismic profiles are not annotated with two-way time. In addition, required data, including crossing lines at sites, seismic grid, seismic velocity, swath bathymetry and sediment cores for the sites need to be submitted to the DB, if they exist, or collected during a new site survey.

SSP Consensus: Required data are not present in the DB. It is not known whether these data exist, and are available; if not, additional site surveys are required. If it can be demonstrated that the data exist, the SSP classification could be raised to 2A

Site Survey Readiness Classification: 5

5.10 553 - Full

Gas hydrate on the Cascadia Margin

Proposal #: 553

Target Type: G and Hydrate

SSP Watchdog: Roger Flood

SSP Proponent(s):

SSP Review: This proposal is to constrain models for gas hydrate formation in subduction zone accretionary prisms which requires knowing the vertical distribution of hydrate and free gas and the vertical flux of fluid and methane through the sedimentary section. The primary site is near Sites 889/890 occupied during Leg 146 where a BSR is identified. Two advanced CORKs are to be deployed at this site (CAS-01), appx. 40 to 100 m apart to allow hydrological tests to be done to study flow rates. The proposed program will study refined models of hydrate formation based in part on results of Leg 146 and Leg 164 drilling. Proposed sites extend to 600 m depth, and are classified as Target Type D (open ocean crust with > 400 m sediment; Site CAS-04 reference site on incoming oceanic crust) and Type C (more than a few hundred meters in an active margin; Sites CAS -01, 02, 03 and 05). The latter sites all have hydrate objectives, and thus may need to meet additional data requirements to sufficiently characterize the study region.

The proposed sites are located along an MCS line collected as part of the Leg 146 site survey study. However, no information, such as shot point, is provided to allow sites to be located along existing profiles in the Site Survey Data Bank. Additional data has been collected since Leg 146 that has been used to select sites. This includes high-resolution, closely spaced seismic data collected in 1993, OBS surveys in 1996 and 1997, SONNE high-resolution lines in 1997, and deeply-towed multichannel data (DTAGS) collected by NRL in 1997. The last data set apparently resolved a number of faults in the accretionary prism in the N. Cascadia area with a scale of 10s of meters. The presence or absence of these kinds of structures needs to be documented at the proposed hydrate sites using available survey data or data to be collected. The proponents note a 3-D high-resolution multichannel survey in summer, 1999 (CCGS TULLY) and further detailed heat-flow measurements, piston coring, and seafloor study in 2000.

The site survey readiness is rated as 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 2001 drilling if a scheduled site survey proceeds as planned). Proposed sites need to be identified along existing Leg 146 profiles. Other existing seismic data near proposed sites needs to be provided as well as 3.5 kHz data as available.

SSP Consensus: Existing data from the N. Cascadia margin shows the existence of a hydrated layer with underlying free gas. High-resolution seismic data (not presented) apparently shows numerous small-scale faults. This suggests that there is small-scale variability in the vicinity of proposed sites that needs to be better characterized to meet hydrate objectives of those sites. New 3-D seismic data will be collected in 1999 to better resolve sedimentary structure. NRL DTAGS data and other high-resolution data also may resolve important sedimentary structures. SSP rating is 2B.

Site Survey Readiness Classification: 2B

5.12 559 – Full

Early Cenozoic Extreme Climates: The Walvis Ridge Transect

Proposal #:559

Target Type: A

SSP Watchdog: Neal Driscoll

SSP Proponent(s): NA

SSP Review: The proponents propose to conduct a depth transect across the Walvis Ridge to determine the paleoceanographic variations associated with several prominent episodes of early Cenozoic climate change (e.g., the Latest Paleocene Thermal Maximum (EOGM)). Six sites (double/triple coring) have been proposed to recover intact sediments in water depths ranging from 2500 and 4500 m. At present, low resolution seismic data exist in the region (R/V Thomas and Vema). To improve the quality and coverage of the seismic reflection data, the proponents are in the process of scheduling a cruise on the R/V Meteor for a regional survey of the proposed sites. The preliminary request for ship time to acquire the high resolution seismic data has already been submitted and the cruise should be completed by early 2001. Some of the proposed sites are not located along seismic lines (e.g., W-6) and it is unclear what criteria was used to locate these sites. Prior to acquiring the new seismic data, the proponents should submit the existing single-channel seismic reflection, 3.5 kHz, and core data from the region, which were used to locate the sites in the proposal.

SSP Consensus: Required data are not in the data bank, not believed to exist but are likely to be available in time for consideration for FY2002 drilling if a scheduled site survey proceeds as planned.

Site Survey Readiness Classification: 3A

5.11 560 – Full PPSP needs geochemistry report

Return to Site 1108: A study of low-angle normal faulting (ASLAN)

Proposal #: 560

Target Type: C

SSP Watchdog: Silver

SSP Proponent(s): None

SSP Review: This proposal is a return to a site (1108) that was attempted on leg 180 but stopped because of presence of thermogenic gas. Reassessment of this problem has allowed the possibility of this site being drilled, subject to the acquisition of additional seismic data. This acquisition is scheduled for September, 1999. Other than this requirement, all other required data exist and are present in the data bank. Thus even though all other data could be ranked 1A, this one set of seismic lines, scheduled to be acquired on 2 days of ship time on the R/V Ewing, do not exist but could be available in time for drilling in 2001. Thus, we rank the missing data as 2B. The existing data are quite adequate to drill the proposed section at Site 1118. We suggest that the proponents also obtain 3.5 data over the site and that they examine this and the seismic shot records for any indicators of gas.

SSP Consensus: We urge the proponents to have the seismic data from the area of site 1108, processed and established in the data bank as soon as possible, in order for this leg to be ready for drilling in 2001.

Site Survey Readiness Classification:

2B (for Site 1108)

1A (for Site 1118)

6.0 other business

Next Year's SSP Meeting

Scheduled 24 – 26 July, 2000 at L-DEO

membership

Enachescu OK for more? - yes

Flood – through Feb. meeting in Zurich

Christesen – The SSP thanks Gail for her hard work during the past three years, and wishes her the best in the future.

Re: replacement for Gail; the panel feel we need additional gas hydrates expertise – geo/biochemical input, eg:

Marta Torres OSU....

Chris Goldfinger
Bill Ussler

SSEP Liaisons:

Nov 1-3 Udine, Italy SSEPS
ESSEP - Hine alt Diebold
ISSEP - Enachescu, alt (hopefully) Whitmarsh

Next SSP meeting

Feb 23 – 25 [field trip 26th] Zurich