

FINAL

JOIDES SITE SURVEY PANEL MEETING, TOKYO, OCTOBER 1991

JOIDES SITE SURVEY PANEL MINUTES

October 8-10, 1991

Ocean Research Institute
Tokyo, Japan

Members: Kidd, Rob (University of Wales, Cardiff, UK)-Chairman
Farre, John (EXXON, USA)
Hirata, Naoshi (Chiba University, Japan)
Kastens, Kim (LDGO, USA)
Larsen, Birger (Geological Survey of Denmark, ESF)
Lewis, Steve (USGS, Menlo Park, USA)
Louden, Keith (Dalhousie University, Halifax, Canada)
Meyer, Heinrich (BGR, Germany)
Pautot, Guy (IFREMER, France)
Von Herzen, Dick (WHOI, USA)

Liaisons: Ball, Mahlon (PPSP)
Blum, Peter (JOIDES Office, UT)
Firth, John (ODP/TAMU)
Tiara, Asahiko (PCOM)

Apologies: Brenner, Carl (Site Survey Data Bank, LDGO)
Moore, Greg (HIG, USA)
Trehu, Ann (Oregon State University)
Zverev, Sergei (Institute of Earth's Physics, Moscow, USSR)

EXECUTIVE SUMMARY

The main business of the SSP's Tokyo meeting was to furnish PCOM with initial assessment of the status of site survey data in support of drilling programmes under consideration for the FY'93 North Atlantic schedule. In the event the system that resulted in the ranking of the proposals to form the "North Atlantic Prospectus" (NAP) leaves SSP with no time to respond on the quality of the data quoted in them. Almost no data was submitted for this meeting and we concerned ourselves with providing PCOM with our best assessment of the likely availability of appropriate survey data to support each proposal. SSP reached the following consensus in Tokyo (Items 11 to 22 refer specifically to NAP programmes):

SSP Consensus 1: SSP revised its watchdog assignments for this meeting to include :

| | | | |
|---------------------|-------|-----|------------|
| Mediterranean Ridge | (330) | --- | Farre |
| VICAP Gran Canaria | (380) | --- | Von Herzen |
| Ceara Rise | (388) | --- | Meyer |

SSP Consensus 2: Because of our infrequent meetings and the commonly occurring need for multiple iterations, SSP normally needs 2 years lead time to compile and evaluate the data for a drilling leg. If the thematic review process produces high priority programs with a shorter lead time, we will make a best effort to evaluate them. However, in such cases the burden will be on the proponents to present, without delay, a complete high quality data package to SSP.

SSP Consensus 3: It is clear that updates on proposal reviews by thematic panels, and sometimes entirely new highly ranked proposals arise such that SSP cannot efficiently deal with them within the present sequencing of Panel meetings. SSP recommends that thematic panels meet about 1 month in advance of SSP leaving us with about 1 month to pass our comments to PCOM. The sequences of meetings are suggested as:

| <u>PANEL</u> | <u>SPRING MEETING</u> | <u>AUTUMN MEETING</u> |
|--------------|------------------------|-------------------------|
| THEMATIC | FEB. TO EARLY MAR. | LATE SEPT TO MID OCT |
| SSP | LATE MAR TO EARLY APR. | LATE OCT TO EARLY NOV. |
| PCOM | MID TO LATE APRIL | LATE NOV. TO EARLY DEC. |

SSP Consensus 4: SSP will continue updates to its guidelines at its next spring meeting for JOIDES Office's proposed new 'ODP GUIDE'. They may include requirements for:

BSR Drilling.
Offset Crustal Drilling.
Deep-towed geophysical surveys.

SSP Consensus 5: Augmentation of Site Survey data packages has rarely taken place through use of "ships of opportunity". Hence SSP members will no longer be asked to provide their country's ship schedules for inclusion in the SSP minutes. However, SSP members are still encouraged to be cognizant of planned ship operations so that they can serve as initial contacts for possible site survey augmentation efforts.

SSP Consensus 6: SSP notes the possible discrepancy between observed and estimated basement depths encountered during Leg 139. Based on analysis of these results together with experience with future EPR drilling, we will consider at our next meeting making deep source seismic profiles a requirement for future mid-ocean ridge/fracture zone sites with crustal objectives.

SSP Consensus 7: As of our meeting, a decision is expected within the week as to whether the *Resolution* will drill Hess Deep in the second half of the current leg (Leg 140). No data whatsoever from Hess Deep has been received at the ODP Data Bank, and no substantive data is included in the Leg 140 prospectus. SSP wishes to express its concern and dismay that the system of checks and balances, which normally ensures that an adequate data package is available to the ODP community, appears to have been circumvented. SSP urgently looks forward to working with proponents on the data package for future Hess Deep drilling.

SSP Consensus 8: SSP Chairman (Kidd) should request of PCOM Chairman that an SSP member (Kastens) attend the next meeting of the Offset Drilling WG to contribute to discussions of

survey requirements, some of which are as yet unclear to SSP itself.

SSP Consensus 9: SSP are happy to approve the data package presented for the Enewetak test drilling. On the other hand, SSP notes that comparisons of the seismic and borehole evidence here with those over other atolls and guyots projected for basement drilling suggest that possible drilling times to basement need to be very carefully assessed for Legs 143 and 144. SSP recommends a local pre-drilling survey by JOIDES resolution over Huevo Seamount and consideration be given to similar surveys over Alison & MIT if basement objectives prevail.

SSP Consensus 10: The site survey data for Cascadia drilling is complete and need not be considered further by SSP. Final approval of hydrate drilling falls under the mandate of PPSP.

SSP Consensus 11: No data has been received at the Data Bank concerning the Alboran Sea or Atlantic-Mediterranean gateway (proposal 323 Rev), but the proposal gives the impression that there is a lot of good quality regional and site specific data in this area that could be gathered together in time for FY'93 drilling.

SSP Consensus 12: For the Mediterranean Ridge Proposal (330), SSP separates the shallow penetration sites (MR-2, MR-6 and MR-7) from the remaining 5 deep penetration sites. With collection of the planned data, SSP sees no problem with assembling a suitable data package for the shallow penetration sites. Successful drilling of the deep penetration sites will require adequate imaging of the Messinian evaporite and pre-Messinian strata in the upcoming 1992 MCS surveys. SSP is concerned that the quality of the MCS data may not be sufficient to image the sub-salt strata and that selection of the deep penetration sites may prove problematic.

SSP Consensus 13: The data set outlined in the proposal for Equatorial Transform Margin Drilling (346A), and the processing that has been carried out or is scheduled by proponents, should provide a high quality package for SSP assessment. The newly processed data should be deposited in the Data Bank for review at the Spring SSP Meeting. Existing heat flow values or newly gathered measurements would be useful in completing this package but are not deemed critical at this stage.

SSP Consensus 14: The data collected for the **New Jersey Sea Level Mid-Atlantic Transect (proposal 348-ADD)** is of excellent quality and sufficient quantity (example records were viewed in this case). SSP notes that seismic processing of high quality would benefit greatly both pre-drilling site selection and post-drilling scientific interpretation, and recommends proponents to pursue this goal in the interests of maximising the return from the surveys and potential drilling.

SSP Consensus 15: The bare rock drilling proposed for the **TAG area (proposal 361Rev)**, with penetrations envisaged ranging from 300 to 1km, will require a site survey package rivaling that for the **Sedimented Ridges**. SSP recognises the existence of a great deal of TAG data that could be lodged with the Data Bank but notes the obvious need for further seismic data (all "required/not available") along with heat flow, further photography and sampling and deep-towed magnetics.

SSP Consensus 16: SSP requests that a preliminary site survey data package be assembled for **VICAP proposal (380) Rev2** as early as possible. The Panel is concerned that the quoted MCS data may not be currently adequate to address objectives relating to basement and lithospheric deformation. Commercial MCS data referred to in the proposal might allay these concerns. The GLORIA survey planned to identify areas of sediment slumping will not address early slumping phases in the development of the apron and again extensive high resolution MCS and SCS will be a requirement.

SSP Consensus 17: Although no adequate survey package yet exists to support the **Ceara Rise proposal (388)**, a funded U.S. cruise proposes to carry out an optimal combination of geophysical techniques and thus the likelihood is that a complete data set will be available for this shallow APC/XCB drilling.

SSP Consensus 18: No specific sites are proposed in this **Mediterranean Sappropels "concept" proposal (391)** so SSP finds it difficult to comment on survey aspects of this proposal; other than to note the proponent's suggestions that their largely shallow objectives might be incorporated in the **Mediterranean Ridge proposal (330)** or in APC coring at existing DSDP sites.

SSP Consensus 19: None of the seismic data for the **North Atlantic-Arctic Gateway (NAAG) DPG Program** are in the ODP Data Bank and proponents are urged to begin sending their material soon. In order to keep the program flexible enough

to respond to the changing ice conditions, it is important that both the prime drilling sites mentioned in the DPG report as well as alternate sites meet the SSP requirements. Additional site survey data which will be collected in 1992 must be processed and ready for assessment as early as possible. In general, seismic data illustrated in the proposals are very low frequency so details of importance for the planning and interpretation of drilling results are not visible. Higher frequency processing or collection of high resolution SCS will be required. Data on frequency and size of ice-rafter debris should be compiled in order to select proper drilling methods. Sidescan coverage should be able to provide some indications of seafloor dropstone concentrations.

SSP Consensus 20: The data illustrations included for the **North Atlantic Rifted Margins (NARM) DPG Program** in the North Atlantic Prospectus suggest that existing data for the four proposed transects are adequate for site selection, despite SSP's inability to carefully evaluate overall data quality from page-size presentations. Proponents involved in future site survey data acquisition (7/92, Newfoundland Basin; Fall 1991, Iberia Abyssal Plain; 1992 and 1993, East Greenland) should consult with SSP and PPSP watchdogs for specific site survey and safety concerns. SSP anticipates evaluating data packages of scheduled NARM drilling programs at its Spring'92 meeting.

SSP Consensus 21: There already exists a considerable site survey data package for the **MARK area proposal (369A)** but SSP notes that there are no transverse MCS lines which run through the proposed sites. We consider that the data are not yet sufficient for the objectives posed. Some attempt to understand the deep structure should be part of the survey stage, in particular, the reason for the existence of the uplifted target block should be addressed. SSP expects that the additional site surveys, including the planned sidescan sonar cruise, will do much to update the database. Deep source seismic surveys may prove to be desirable when SSP revises its guidelines.

SSP Consensus 22: SSP considers that a reasonable site survey package could be gathered in support of the **Vema FZ proposal (376 Rev)** should planned survey cruises take place. A preliminary package should be submitted to the Data Bank for appraisal at SSP's Spring meeting. We note that critical sidescan surveys are not scheduled to take place until 1993 to complement the existing MCS and refraction data. SSP recommends additional collection of deep source seismics and OBS data.

SSP Consensus 23: Kidd to relay to PCOM a request that, should they schedule drilling in FY'93 that is clearly dependent on the collection of further site survey data, PCOM should define a back-up alternate leg to take place in the event that the surveys are not completed. This is to put responsibility and pressure to deliver on proponents. SSP would in turn discuss cruise plans and required data processing, liase closely with proponents and possibly meet more frequently in abbreviated session to view data with proponents.

SSP Consensus 24: SSP recommends to PCOM that the term of membership of its Panel date from first attendance and that terms for SSP members be 4 years rather than 3 to allow for the full progression of a set of proposals during their stewardship.

SSP Consensus 25 : Steve Lewis of USGS, Menlo Park and Heinrich Meyer of BGR, Hannover retire from the Panel after this meeting as part of SSP's review of its membership. The Panel expresses its thanks to Steve and Heinrich for their hard work as long-standing SSP members. Steve is recognised as a particularly tenacious "watchdog" whose activity will be sorely missed. SSP wishes him the best of luck as co-chief for the Chile TJ drilling.

JOIDES SSP MEETING: ORI, TOKYO,
8-10, OCTOBER, 1991

AGENDA

1. PRELIMINARY MATTERS

- (i) Introduction + New Assignment of Proposals for this Meeting (Kidd)
- (ii) Logistics (Hirata)
- (iii) Outline of N. Atlantic Prospectus and other JOIDES Office/PCOM Items (Blum)
- (iv) Update on new SSP guidelines + S-proposals (Blum)
- (v) TAMU Meeting: Minutes changes & Matters arising
- (vi) Updated Ship Schedules (Kidd)
- (vii) Other business for Agenda (Kidd)

2. REPORTS:

- (i) PCOM (Tiara)
- (ii) JOIDES Office (Blum) - see above
- (iii) TAMU (Firth)
- (iv) PPSP (Ball)
- (v) DATA BANK

DPG's:

- N. Atlantic Gateways (Larsen)
- N. Atlantic Rifted Mgs (Blum)
- Atolls & Guyots (Blum)

WG's:

- Offset Drilling (Blum)
- Sea Level (Blum)

3. SCHEDULED LEGS - FY '92

- (i) Chile Triple Junction (Lewis)
- (ii) East Pacific Rise (Lewis)
- (iii) Atolls & Guyots (Firth)
- (iv) Enewetak Engineering (Firth)
- (v) N. Pacific Neogene (Larsen)
- (vi) Cascadia (Louden)
- (vii) Hess Deep -status if not drilled on 140 (Firth)

4. STATUS OF N. ATLANTIC PROGRAMS

Assessment of the North Atlantic Prospectus of proposals prepared by JOIDES Office.

PROSPECTUS:

- 1. Mediterranean Gateway - proposal 323/Rev -- KASTENS
- 2. Mediterranean Ridge ("new") - proposal 330 -- FARRE
- 3. Equatorial Atlantic Transform Margin - proposal 346/A -- PAUTOT
- 4. New Jersey Margin Sealevel - proposal 348 + 348/A -- KASTENS
- 5. TAG Area: High-temperature Hydrothermalism - proposal 361/Rev -- LOUDEN
- 6. VICAP Gran Canaria "new"- 380 (Rev) + Rev 2 -- von HERZEN
- 7. Ceara Rise 388 "new"-- H. MEYER
- 8. Mediterranean Spropels "new"- proposal 391 -- KIDD
- 9. NAAG-DPG: Arctic Gateways - proposals 305, 320, 336 -- LARSEN
- 10. NARM-DPG: volcanic - proposals 392-396
non-volcanic - proposals 334,365
Rev Galicia Margin 334 & GB-Iberia
plume volc. 363 -- LEWIS
- 11. MARK area: long section of upper mantle (MAR Offset Drilling) - proposal 369, 369/Rev, 369/A -- HIRATA
- 12. Vema FZ: Proposal 376/Rev-- HIRATA

[OTHERS:

- (Agreed in 1(i) and 1(iii) not to discuss these items this meeting)
- 13. Barbados Accretionary Wedge - proposals 378/A & 372/A -- KIDD
 - 14. West Florida Margin Sea Level - proposal 345/A -- MOORE
 - 15. Caribbean Crust - proposal 343 -- FARRE
 - 16. Cayman Trough - proposal 333 - KIDD]

SSP TOKYO OCT'91 - ACTION ITEMS

7. OTHER BUSINESS

- (i) Revised watchdog assignments (Kidd)
- (ii) Feedback to Proponents (Blum)
- (iii) PANCHM/PCOM Report
- (iv) Panel Membership (Kidd)
- (v) Next meeting [Spring '92 USA?]

APPENDICES WITH THESE MINUTES

- 1. Proposal Ranking Oct '91
- 2. New SSP Guidelines
- 3. Updated JOIDES schedule
- 4. SSP matrices as of Tokyo Oct '91 Meeting

Action Item 1: Kidd to relay to Panel Chairmen and PCOM at the December meetings in Austin that North Atlantic proponents of Legs that get on the FY'93 schedule should begin submitting data to the Data Bank for review at SSP's Spring meeting. SSP Watchdogs to follow-up after the Austin PCOM with contacts to proponents.

Action Item 2: Kidd to raise suggested new timing of SSP versus Thematic Panel meetings at the Austin PANCHM and PCOM meetings

Action Item 3: Kidd will circulate the finalised version of the last SSP meeting minutes with the draft of the present one.

Action Item 4 : TAMU representative (Meyer?) at the Spring'92 SSP meeting is asked to bring for analysis tables of estimated versus drilled depths to basement for Leg 139 and estimated versus drilled thickness of rubble zone on Leg 142.

Action Item 5. SSP Chairman (Kidd) should request of PCOM Chairman that an SSP member (Kastens) attend the next meeting of the Offset Drilling WG to contribute to discussions of survey requirements, some of which are as yet unclear to SSP itself.

Action Item 6: Larsen to check N. Pacific sites with basement objectives that have been relocated. Kidd to be notified result prior to Austin PCOM Meeting.

Action Item 7: Hinz to assume H.Meyer's watchdog role for Ceara Rise proposal 388.

Action Item 8: SSP watchdogs should not contact proponents with news of SSP Tokyo assessments until it is known which of the NAP proposals were selected by

PCOM for the FY'93 schedule. It should be stressed to these proponents that they should submit all available data relating to their proposals to the Data Bank for assessment prior to and during the next SSP meeting in April '92.

Action Item 9: Kidd to relay to PCOM a request that, should they schedule drilling in FY'93 that is clearly dependent on the collection of further site survey data, PCOM should define a back-up alternate leg to take place in the event that the surveys are not completed. This is to put responsibility and pressure to deliver on proponents. SSP would in turn discuss cruise plans and required data processing, liase closely with proponents and possibly meet more frequently in abbreviated session to view data with proponents.

Action Item 10: The Panel discussed likely US replacements for Steve Lewis who would cover his particular MCS seismics expertise and Kidd has two names to relate to PCOM Chair Austin.

Action Item 11: Kidd should request the next SSP meeting in Copenhagen, hosted by Larsen at the Denmark Geological Survey, spanning the dates 2nd, 3rd and 4th April 1992.

SSP TOKYO-DAY ONE

1. PRELIMINARY MATTERS

(i) Introduction

Chairman Rob Kidd opened the meeting at 0900. He outlined the general aims of this meeting which were now orientated entirely around the need to provide PCOM with preliminary reviews of proposals in the North Atlantic Prospectus. Only a few proposals new to SSP were in the Prospectus and some watchdog assignments would have to be made.

SSP Consensus 1: SSP has revised its watchdog assignments for this meeting to include :

| | | | |
|---------------------|-------|-----|------------|
| Mediterranean Ridge | (330) | --- | Farre |
| VICAP Gran Canaria | (380) | --- | Von Herzen |
| Ceara Rise | (388) | --- | Meyer |

We agreed that SSP would not at this meeting provide preliminary reviews on any of the proposals not included in the North Atlantic Prospectus and so proposals in the "Others" category were removed from the Agenda. No submitted data would be available for this meeting relating to the Prospectus: our job would be to provide PCOM with preliminary guidance. Our next meeting would definitely expect to begin detailed reviews of submitted data and this message should be forcibly relayed to all Prospectus proponents.

Action Item 1: Kidd to relay to Panel Chairmen and PCOM at the December meetings in Austin that North Atlantic proponents of Legs that get on the FY'93 schedule should begin submitting data to the Data Bank for review at SSP's Spring meeting. SSP Watchdogs to follow-up after the Austin PCOM with contacts to proponents.

Right at the start of the meeting SSP members expressed concern that we were getting into a responsive mode on shortened time scales of less than our optimum 2 to 2.5 years and we were here to have a meeting where very little real data would be viewed. It was pointed out that the thematic panels would meet at about this time and could well add to the proposals tabled in the

Prospectus. Discussion ensued on the very real possibility that some proposals would arrive in our hands so late that we could not ensure an adequate review. On the other hand, the recent publication of more formal guidelines for submission meant that more complete packages might be expected on initial submission. Blum suggested an SSP request for a scheduling of thematic and SSP Meetings to alleviate this problem and this was agreed. It was also agreed that there should be some indication from SSP that it would have some cut-off in how late it would be prepared to review initial site survey data packages. This discussion resulted in the following consensuses:

SSP Consensus 2: Because of our infrequent meetings and the commonly occurring need for multiple iterations, SSP normally needs 2 years lead time to compile and evaluate the data for a drilling leg. If the thematic review process produces high priority programs with a shorter lead time, we will make a best effort to evaluate them. However, in such cases the burden will be on the proponents to present, without delay, a complete high quality data package to SSP.

SSP Consensus 3: It is clear that updates on proposal reviews by thematic panels, and sometimes entirely new highly ranked proposals arise such that SSP cannot efficiently deal with them within the present sequencing of Panel meetings. SSP recommends that thematic panels meet about 1 month in advance of SSP leaving us with about 1 month to pass our comments to PCOM. The sequences of meetings are suggested as:

| | <u>SPRING MEETING</u> | <u>AUTUMN MEETING</u> |
|----------|------------------------|-------------------------|
| PANEL | | |
| THEMATIC | FEB. TO EARLY MAR. | LATE SEPT TO MID OCT |
| SSP | LATE MAR TO EARLY APR. | LATE OCT TO EARLY NOV. |
| PCOM | MID TO LATE APRIL | LATE NOV. TO EARLY DEC. |

Action Item 2: Kidd to raise suggested new timing of SSP versus Thematic Panel meetings at the Austin PANCHM and PCOM meetings.

Kidd continued the meeting with comments that he had received apologies from Greg Moore (change of meeting dates had impacted his teaching schedule); Anne Trehu (no explanation though some indications that there may have been confusion at JOI on her attendance); Carl Brenner (due to illness : SSP members expressed their concern and pass on their best wishes to Carl for a speedy recovery). Taira and Firth were welcomed as substitute attendees in place of Watkins and A. Meyer respectively. Zverev our new Soviet member had not arrived and we were later advised he had no visa. We look forward to Anne and Sergei's attendance at our next Panel meeting.

(ii) Logistics (Hirata)

Naoshi Hirata welcomed the Panel to Tokyo and outlined planning for meals, secretarial support and other logistics. Tiara welcomed SSP to ORI pointing out that we had arrived during a very wet period with floods, interspersed between a series of typhoons - the next typhoon was due as we would be set to leave Tokyo!

(iii) Outline of N. Atlantic Prospectus and other JOIDES Office/PCOM Items (Blum)

At the Chairman's request Peter Blum outlined a number of points relating to the Prospectus and other items that would immediately affect our meeting business.

Prospectus Content: The North Atlantic Prospectus (NAP), September 1991, contains the highest ranked proposals within the area defined by PCOM for drilling during the next fiscal year to be scheduled (1993). The NAP is based on the thematic panel rankings of spring 1991 (Appendix 1). The "highest-ranked" cut-off for proposals to be included in the NAP was defined by PCOM at its August 1991 meeting; thematic panels may include new proposals (now being reviewed) into the prioritization of the NAP (instructions by PCOM chairman). PCOM's charge to SSP was seen to be to provide an "assessment of drillability" of NAP programs, for consideration by PCOM at the Annual Meeting in December. Members noted here that one 'proposal' included in the NAP (Med. Spropels) and a whole section on offset drilling contained no specific site proposals; they were 'concept' proposals and would prove difficult to review.

Blum requested that SSP use correct proposal numbers according to the JOIDES Office's revised numbering system (introduced at previous SSP meetings), and when referring to the

most recent updates. Chairman also requested that henceforth during SSP meetings members declare at the beginning of discussion of individual proposals if they are proponents.

New Proposals: Blum reported that an extremely low proposal submission rate during the summer was followed by extremely high rate from late August to mid September; this trend is likely to continue (because of the popularity of marine studies in the North Atlantic). He suggested that SSP watchdog assignment to new proposals is of little use at this stage, until global prioritization by thematic panels in spring 1992(?!).

(iv) Update on new SSP guidelines + S-proposals (Blum)

Blum commented that the changes to our guidelines had been successfully implemented (**Appendix 2**) through the efforts of Kastens and Panel comments over E-mail. Kidd noted that we still expect to update the guidelines for BSR's, FZ/Offset drilling, deep-towed geophysical surveys, and possibly other areas. Blum said that JOIDES Office may produce a new "Guide to ODP" during summer '92 and it was agreed that we would discuss these items at our Spring'92 meeting.

SSP Consensus 4: SSP will continue updates to its guidelines at its next spring meeting for JOIDES Office's proposed new 'ODP GUIDE'. They may include requirements for:

BSR Drilling.

Offset Crustal Drilling.

Deep-towed geophysical surveys.

"Geriatric" Proposals: At its last meeting in Hannover, PCOM recommended that proposals which have not been updated for three full calendar years before the present calendar year (ie. January 1, 1988 for 1991 activities; January 1, 1989 for 1992 activities) be declared formally "inactive". Thematic panels will be given the directive by the JOIDES Office not to review inactive proposals formally, but rather to initiate submission of proposal updates from proponents if there is sufficient panel interest. The community will be informed about this change in policy through the JOIDES Journal.

The following is a summary of the proposal status types assessed by the JOIDES Office:

A proposal is "active" if:

- 1) it is in review (generally done only once by the thematic panels),
- 2) it has been ranked by thematic panels,
- 3) it has not been ranked, but was submitted after January 1, 1988.

A proposal is "inactive" if:

- 1) it has been replaced by a revised proposal,
- 2) it has been forwarded to a DPG,
- 3) it has been drilled, or is on the schedule,
- 4) it has not been drilled and has not been updated since January 1, 1988 (for calendar year 1991).

In order to keep a proposal active, proponents must submit an update latest after three years since initial submission. The update may be an addendum or a revised version of the proposal. Minimum requirements for an update are responses to thematic panel comments, and an introductory note identifying the revision or addendum. *Typically, updates also include new site survey data and/or refined drilling strategies.*

It was agreed by PCOM that the new statute of limitations procedure would take effect on *January 1, 1992*. Since SSP attempts to keep track of proposals not yet ranked by thematic panels but reviews only ranked ones, some sorting of the status of long-held proposals was clearly needed and was generally welcomed.

S-proposals: PCOM, at its August meeting in Hannover, decided to abandon the experiment of receiving "Supplemental Science Proposals".

Although only three S-proposals (S-1, S-2, S-3) were received at the JOIDES Office for legs 141 to 147, the enormous difficulties with the concept became obvious when PCOM considered scheduling of supplemental science. In a first step, PCOM had to prioritize S-proposals against each other, and came to the following motion: *"Upon evaluation of the three supplemental science proposals we have received, PCOM ranks the potential science return of S-3 (OSN-2) the highest. Therefore, PCOM will consider only S-3 for scheduling in FY92)."*

In a second step, prioritized S-proposals were judged against science they would replace. This most delicate and complex task could not be completed at the August meeting because further advice from thematic panels was needed. "In order to decide at the Annual Meeting whether to reserve a maximum of 10 days

during Leg 145 for drilling a re-entry hole, OSN-2, paired with NW-1A (Supplemental Science Proposal S-3), PCOM asks the thematic panels and co-chiefs for Leg 145 to determine which sites would be modified or dropped to accommodate up to 10 days at OSN-2."

PCOM consequently abandoned the (subtraction) concept of S-proposals and will not issue any call for such proposals for the North Atlantic (1993) and subsequent schedules.

(v) TAMU Meeting: Minutes changes & Matters arising

The minutes of the TAMU meeting were confirmed as an accurate record of SSP activity at that time, although Kidd noted that a consensus item in the main text (dealing with the NAAG-DPG proposals) had not found its way on to the full consensus listing. Discussion ensued on how, within the tight time frame between SSP and PCOM, minutes could be revised if required by members and also how to make sure that SSP members have a copy of the final version. It was agreed that, should the sequencing of panel meetings be agreed as we suggest, there should still be time (using E-mail and FAX) for updates to the draft before JOIDES Office completes the PCOM Agenda book. On the agreed finalised version of the TAMU Meeting the Chairman will ensure that it is circulated with the draft of the next meeting.

Action Item 3: Kidd will circulate the finalised version of the last SSP meeting minutes with the draft of the present one.

(vi) Updated Ship Schedules (Kidd)

Only the UK ship schedule was available for this meeting and SSP debated the value of continuing the practice of members obtaining these schedules, often with some difficulty, in the light of its current practices. Agreement was reached that the practice should be discontinued.

SSP Consensus 5: Augmentation of Site Survey data packages has rarely taken place through use of "ships of opportunity". Hence SSP members will no longer be asked to provide their country's ship schedules for inclusion in the SSP minutes. However, SSP members are still

encouraged to be cognizant of planned ship operations so that they can serve as initial contacts for possible site survey augmentation efforts.

(vii) Other business for Agenda (Kidd)

It was agreed to add an item to allow in Day Three for a discussion of items that Chairman should include in his reports to PCOM and PANCHM at the Annual meeting in Austin.

2. REPORTS:

(i) PCOM (Tiara)

Most PCOM items had been dealt with by this point in Blum's initial presentation. Taira concentrated on two items:

(a) the international effort on ODP renewal (MOU's to be signed October '92). He commented that favourable internal reviews had been reported to NSF by the UK, Germany and ESF; France was in the review process and that in Japan a "critical" review might be expected;

(b) OPCOM activity on Alternate Platforms: noting that the Soviets have a half-built drillship for riser drilling and France have a ship planned with APC capability. Japan's projected riser drilling ship is expected to be independent of ODP.

(ii) JOIDES Office (Blum)

Nothing to add here because of the extended item 1.(iii) above.

(iii) TAMU (Firth)

Cruises update: Leg 137 ended on 1 May 1991 in Panama. The principal objective of the cruise was to recondition Hole 504B for future deepening and downhole measurements; this included completing remedial measures to clean junk for the hole left during Leg 111, and conducting tests to prove the feasibility of continued coring. Before these operations were begun, undisturbed borehole temperatures were logged and seven fluid samples were collected. Cleaning the junk from the bottom of the hole required less than one week of straightforward fishing, milling, and drilling operations. Coring tests with the ODP rotary coring system and a conventional diamond core barrel yielded mixed results, suggesting that future drilling will require trade-offs between penetration and recovery. In total, Hole 504B was

deepened by 59.2 m to a total depth of 1621.5 mbsf (1347 m into basement); of this interval 48.6 m was cored, with an overall recovery of 8.77 m. The recovered rocks were all interpreted as a continuation of the sheeted dike complex. Unfortunately, tests with the diamond core barrel were terminated when an outer core barrel with the diamond bit broke off in the hole, and this equipment was not recovered during the leg due to lack of time and appropriate fishing tools. Nevertheless, the general consensus is that the lost equipment can easily be retrieved with proper fishing tools, and probably represents only a minor impediment to future deepening on Leg 140.

Leg 138 sailed from Panama on 5 May, and ended in San Diego on 4 July. The primary objective of the cruise was to define the paleoceanographic evolution of the eastern equatorial Pacific during the last 12 million years. To address this objective, 5536.8 m of core were recovered from 11 sites drilled along two north-south transects (95°W and 110°W) that crossed the complex oceanographic circulation system of the equatorial Pacific. The 5536.8 m of core recovered represented 99.9% recovery of the interval cored, and broke the existing record for total core recovery set on Leg 133.

Leg 139 sailed from San Diego on July 11 and ended in Victoria on Sept. 11. Four sites were occupied in the Middle Valley of the northern Juan De Fuca Ridge, with the overall objective of elucidating processes and products of hydrothermal circulation in a sedimented spreading center. Site 855 drilled four holes (penetration from 63 -119 mbsf) next to a valley-bounding normal fault. All holes intersected basement, 2 in the footwall block, 2 in the hanging wall block. Pore water geochemistry and low heat flow indicate that seawater is being drawn down to basement along the fault. Site 856 drilled 8 holes into and adjacent to a seafloor sulfide deposit, defining the minimum lateral and vertical extent of this deposit. Two RCB holes penetrated down to 65 and 95 mbsf without reaching the base of the massive sulfides. The sulfides probably were formed from precipitation at the seafloor. At Site 857, four holes were drilled (maximum penetration 936 mbsf) to study the hydrogeology of a hydrothermal reaction zone and the structure and composition of a sediment-and-sill complex. The base of the sediment/sill complex was not reached. Site 858 was situated close to a high-temperature, hydrothermal vent site; drilling there included over 100 m of penetration into the upper part of extremely young, igneous crust. Heat flow measurements indicate that fluid flow feeding the vent is very localized.

SSP discussion ensued on the discrepancies on this leg between projected and true depths to the base of the sediment/sill sequence and basement. Clearly some kind of possibly deep towed source geophysics is required to better determine projected drilling times.

SSP Consensus 6: SSP notes the possible discrepancy between observed and estimated basement depths encountered during leg 139. Based on analysis of these results together with experience with future EPR drilling, we will consider at our next meeting making deep source seismic profiles a requirement for any future mid-ocean ridge/fracture zone sites with crustal objectives.

Action Item 4 : TAMU representative (Meyer?) at the Spring'92 SSP meeting is asked to bring for analysis tables of estimated versus drilled depths to basement for Leg 139 and estimated versus drilled thickness of rubble zone on Leg 142.

Leg 140 is the cruise currently underway. PCOM gave one week for cleanout of Hole 504B or a decision to move to Hess Deep - this decision is being made about now. It was noted that little information on the Hess Deep drilling appears in the Leg 140 Prospectus. In fact, as far as we are aware no documentation was sent to the Data Bank prior to sailing. These facts caused much consternation and discussion given SSP's recognition at its last meeting that time was so short for the proponent to get his survey package together that he had effectively to bypass SSP and liaise directly with Carl Brenner to have it complete for PPSP and the Prospectus.

SSP Consensus 7: As of our meeting, a decision is expected within the week as to whether the Resolution will drill Hess Deep in the second half of the current leg (Leg 140). No data whatsoever from Hess Deep has been received at the ODP Data Bank, and no substantive data is included in the Leg 140 prospectus. SSP wishes to express its concern and dismay that the system of checks and balances which normally ensures that an adequate data package is available to the ODP community appears to have been circumvented. SSP urgently looks forward to working with proponents on the data package for future Hess Deep drilling.

An updated JOIDES resolution schedule is included here as SSP **Appendix 3**.

ODP/TAMU has proposed testing the drilling capabilities of the JOIDES Resolution in shallow water by drilling one rotary core site in the lagoon at Enewetak Atoll during either Leg 143 or 144. PCOM endorsed these tests at their April meeting, limiting the duration of the test, including deviation from the proposed tract, to not exceed 60 hours. The prime criteria for the site include: (1) water depth within the range 20-50 m; (2) lithified rock as close as possible to the seafloor; (3) location within the sheltered waters of the lagoon to minimize the effects of swell/sea on dynamic positioning (i.e., the site should not be too close to the channels entering the lagoon); and, (4) away from bomb test sites, because recovery would probably be poor in the shattered rock. ODP is in the process of defining proposed site locations, and hope to present those locations to PPSP at their meeting later this month. (SSP reviewed seismic data for Enewetak later under item 3(iv).)

Firth also commented on shipboard and TAMU staffing, the Annual ODP Co-Chief Review, and the long awaited RFP for real-time navigation on JOIDES 'Resolution'.

(iv) PPSP (Ball)

The Safety Committee is glad to report that Leg 139, sedimented ridge drilling, presented no problems from standpoint of excessive hydrogen sulfide. Leg 142, on the East Pacific Rise, still represents a potential H₂S problem. The planned penetration of bottom simulating reflections on Leg 141, Chile Triple Junction, continues to command the Safety Panel's attention. A preview of the Cascadia leg is scheduled for PPSP's next meeting in late October.

PPSP will meet in San Diego on 24-25 October. They will review the Leg 143 and Leg 144 drillsites, preview the drilling planned on the Cascadia margin during Leg 146, and finalize the draft of the new Safety Manual (to be published as a special issue of the JOIDES Journal).

(v) Data Bank

Carl Brenner did not attend but reported that SSP has reviewed all the data which appear in the safety package for Leg 143/144. The proposed drillsites for Legs 145 and 146 will be

reviewed at the PPSP meeting tentatively scheduled for sometime in March 1992.

(vi) DPG's

The N. Atlantic Gateways DPG has finished its work, the report was published in JOIDES Journal v 17-2 pp 38-50 and is included in the North Atlantic Prospectus. Larsen noted that there may later be some combining of NAAG and NARM proposals.

The North Atlantic Rifted Margins DPG have lodged their final report but PCOM has left it open whether the Group will be asked to meet again.

The Atolls & Guyots DPG is to be disbanded. It was noted that the Enewetak drilling will be included in the prospectus for the two legs and possibly also the S-3 proposal's objectives.

(vii) WG's

The Sea Level Working Group has to date discussed only approaches in its two meetings. No targets are expected until the middle of next year.

The Offset Drilling WG has met once and their preliminary discussions are contained in an executive summary in the N. Atlantic Prospectus. This includes their initial assessment of site survey data types that would be needed and SSP was very interested in their recommendations. SSP wishes to contribute to the Working Group's discussions in this area: thus there was a consensus (no.8) that we should request a liaison to the next WG meeting.

SSP Consensus 8/Action Item 5. SSP Chairman (Kidd) should request of PCOM Chairman that an SSP member (Kastens) attend the next meeting of the Offset Drilling WG to contribute to discussions of survey requirements, some of which are as yet unclear to SSP itself.

3. SCHEDULED LEGS - FY'92

The Leg 141 co-chiefs now do not expect to get to the pre-collision zone or to the northern sites which were not reviewed by PPSP. Ball commented at how smoothly this operationally difficult drilling proposal had passed PPSP largely due to the hard work of its SSP watchdog, later to become co-chief. Temperatures of 150 to 200°C are now modelled at the base of slope based on BSR depths

- SSP will follow with great interest developments on this Leg because of implications for its future review of sites with BSR's.

(ii) East Pacific Rise (Lewis)

The primary objective for Leg 142, East Pacific Rise Engineering, is to maximize coring time using the latest model of the diamond coring system (DCS). A refined version of the mini hard rock guidebase will be deployed in conjunction with the first stage of a new version of the drill-in bottom hole assembly (BHA). Coring with the DCS will continue until the system has demonstrated that it can achieve satisfactory rates of core recovery in the fractured formations of the EPR or until downhole temperatures become too high for the safety of the personnel on the DCS platform. The drilling target is a minimum of 100 m of penetration into fractured basalt with a minimum of 50% recovery.

Site EPR-2 is the primary site chosen for Leg 142 operations. Alternate sites include EPR-1, EPR-1A, EPR-2A, and EPR-3. Diving operations have taken place since our last meeting allowing selection of EPR-2 in a flat sheet lava portion of the axial graben. Recent near-bottom seismic refraction work shows that EPR-2 has about 50-60 m of low-velocity (≈ 2 km/s) material interpreted to be "rubble", overlying material of approx. 5.5 km/s. Site EPR-1 is the primary back-up site for EPR-2. Both sites are well-characterized by previous site survey investigations but note SSP Action Item 4.

(iii) Atolls & Guyots (Firth)

See earlier discussion in 2(iii) and (iv) and next item.

(iv) Enewetak Test Drilling (Firth)

SSP reviewed the seismic profiles and borehole data for the Enewetak site (Appendix 4, Table 1) and were generally impressed with the data quality. Members commented on the similarity of the seismic sequence with that at Huevo Guyot where the projected sediment-basement contact in the central lagoon is at around 900 M sub-bottom. Here a similar reflector at similar depth has borehole evidence indicating it is within or the base of a sediment-sill sequence and not basement which is not well imaged below.

SSP Consensus 9: SSP are happy to approve the data package presented for the Enewetak test drilling. On the other hand, SSP notes that comparisons of the seismic and borehole evidence here with those over other atolls and guyots projected for basement drilling suggest that possible drilling times to basement need to be very carefully assessed for Legs 143 and 144. SSP recommends a local pre-drilling survey by JOIDES resolution over Huevo Seamount and consideration be given to similar surveys over Alison & MIT if basement objectives prevail.

(v) N. Pacific Neogene (Larsen)

Site PM 1 (Patton Murray Seamount) was approved by SSP at the July 90 meeting. Sites NW-1A and NW-4A were approved at the same meeting. The seismic reflection data are poor but are still judged sufficient for the drilling of paleoceanographic objectives with limited basement penetration by APC/XPC techniques, as long as seismics are run by the drillship on approach and through the sites. The identification of the basement in the currently available data for NW-1A is insufficient for planning the installation of OSN-2.

According to Carl Brenner, the assigned Co-chief, Dave Rea, has picked positions for sites on Detroit Seamount (PCOM 20-22 Aug 91 minutes, app. 12) called DS-1, DS-2, DS-2A and DS-3. Of these DS-1 and DS-3 have basement objectives as well as paleoceanographic objectives. SSP requests that information on the site positions be given to the panel before final SSP approval of the sites. Because of the shifts in positions of these sites from

those reported previously in SSP minutes, we recommend new designations for these sites.

SSP Consensus 9: Site survey data is generally sparse and of poor quality for the N. Pacific Neogene Leg 145 site PM1 is already approved. NW-1A and NW-4A are approved as long as local pre-drilling surveys take place with JOIDES resolution. NW-1A under consideration for OSN-2 is currently insufficiently surveyed for basement drilling. Approved sites on Detroit Seamount have been relocated and are being re-examined by SSP watchdog Larsen.

Action Item 6: Larsen to check N. Pacific sites with basement objectives that have been relocated. Kidd to be notified result prior to Austin PCOM Meeting.

(vi) Cascadia (Louden)

All sites as specified by the Cascadia DPG were accepted by SSP at our last meeting, except for Site VI-5 on the Vancouver margin, where it is intended to drill through a BSR sequence. The exact location of this site will be considered by PPSP based on future experience with BSR drilling which is included for the Chile margin. Correcting misinterpretations from our previous meeting, SSP now notes the presence of crossing MCS lines within the region of the proposed drilling area of Site VI-5. Analysis of these data indicate flat lying basement when corrected for velocity variations due to the hydrate. Recent seismic modelling by R. Hyndman and G. Spence suggest a thin 17 m hydrate layer with no requirement for free gas accumulation beneath the hydrate. This result apparently differs from the environment of the Chile margin where phase reversal in MCS data indicate a larger gas accumulation.

Analysis of previous site survey data on the Oregon margin is continuing with preparation of a structural interpretation from the 1989 MCS survey. SeaMarc 1A images of high acoustic backscatter correspond with zones of carbonate precipitation based on submersible observations, including recent Alvin dives in Sept 1991 near Site OM-7. These conform to indications of fluid migration along fault zones as previously interpreted. GLORIA sidescan images processed by B. Carson will be supplied to the Data Bank.

SSP Consensus 10: The site survey data for Cascadia drilling is complete and need not be considered further by SSP. Final approval of hydrate drilling falls under the mandate of PPSP.

(vii) Hess Deep

(See discussion for Leg 140 above with SSP Consensus 7.)

SSP TOKYO DAY TWO

4. STATUS OF N. ATLANTIC PROGRAMS

1. Mediterranean Gateway - proposal 323/Rev -- KASTENS -
-(Kidd proponent)

SSP watchdog Kastens wrote to proponent Comas in May, conveying the results of the spring SSP meeting, at which we concluded "this project has a good start towards satisfying SSP requirements". A critical turning point for this project will be the decision for one leg or two legs. If two legs are allocated, then considerably more data must be provided to evaluate Sectors 4 and 5 in the Alboran Sea, and the site southwest of the Straits of Gibraltar (Appendix 4, Table 2). In either case, additional information will be required for the Gulf of Cadiz sites." Neither the SSP watchdog nor the ODP Data Bank has received any communication from these proponents since then. Kastens has informally received another proposal entitled "Tectonic evolution of the Alboran Sea: A Proposal for ODP Drilling (proponents A. B. Watts and J.P. Platt), which proposes drilling in the same general area as the Alboran portion of the Comas proposal and which, we understand from Blum, is being reviewed by thematic panels. The Watts/Platt proposal includes sites located on high quality MCS data collected from the R/V Conrad; this data set was not mentioned in the Comas proposal, and would be a valuable addition to the regional data package.

The proponents are urged to begin submitting a data package to the ODP Data Bank. SSP and Safety Panel will expect to see the industry borehole data by which the seismic data have been calibrated; the proponents are thus reminded that data in the Data Bank can be held proprietary. For safety considerations, the proponents will need to fully document their claim (p.22) that Messinian evaporites are not present at their Alboran Sea sites.

SSP Consensus 11: No data has been received at the Data Bank concerning the Alboran Sea or Atlantic-Mediterranean gateway (proposal 323 Rev), but the proposal gives the impression that there is a lot of good quality regional and site specific data in this area that could be gathered together in time for FY'93 drilling.

2. Mediterranean Ridge ("new") - proposal 330- FARRE

The rationale of this proposal: "An Accretionary Prism in a Collisional Context" is to add the Mediterranean Ridge (MR) to a spectrum of accretionary prisms studied by deep sea drilling.

Important distinctions for the MR proponents are:

- 1) MR is underlain by continental crust in incipient collision
- 2) Salt layer at shallow depth has strong impact on deformation and fluid flow
- 3) Unique Plio/Quaternary drape contains a high-resolution record of climate change.

Summary of Major Scientific Objectives:

Tectonic: define tectonic style of MR and compare with other accretionary prisms; determine role of salt in deformation mechanics; examine deep structure of mud diapirs.

Sedimentary/Geochemical: influence of salt seal on fluids within MR complex; role + composition of gasses beneath salt seal.

Ocean History: origin/significance of Plio/Quaternary sapropels; pre-Messinian stratigraphy and Paleoceanography.

Strategy:

Drill 2 transects across MR and 2 extra sites for specific targets. Transect MR1-3 crosses the narrowest + most deformed portion of the Ridge. Transect MR4-6 crosses the western portion of MR where continental collision has not yet started. Site MR-7 is along the western portion of the Ridge in an interpreted tensional environment. Site MR-8 is in a salt collapse basin where pre-Messinian sediments can be sampled.

Status of Site Survey Data:

A package has not been submitted yet. The proponents plan to submit one by year-end 1991. SSP's matrix for this proposal is currently as in Appendix 4, Table 3.

Recently Collected/Planned Data Collection includes:

- 5 long piston cores

- High-res SCS reflection data in Sept. '91
- MCS survey in 1992 on vessel Explora
- MCS survey in 1992 on vessel Valdivia
- A Hydrosweep survey from vessel "Explora" was mentioned in a Jan. '90 addendum. Presumably, this will occur in 1992.

SSP Consensus 12: For the Mediterranean Ridge Proposal (330), SSP separates the shallow penetration sites (MR-2, MR-6 and MR-7) from the remaining 5 deep penetration sites. With collection of the planned data, SSP sees no problem with assembling a suitable data package for the shallow penetration sites. Successful drilling of the deep penetration sites will require adequate imaging of the Messinian evaporite and pre-Messinian strata in the upcoming 1992 MCS surveys. SSP is concerned that the quality of the MCS data may not be sufficient to image the sub-salt strata and that selection of the deep penetration sites may prove problematic.

3. Equatorial Atlantic Transform Margin - proposal 346/A - PAUTOT

JOIDES Proposal 346 was submitted in summer 1989, evaluated by last spring's Tectonic Panel, and recently (March 91) was complemented by an addendum concerning data processing.

A new version of this proposal was sent to JOIDES Office in early August. This latest version is not greatly modified from previous versions. The most important input concerns the data processing of MCS lines. The following processing has been applied:

- processing has initially been only on the 24 channel data;
- velocity analysis is complete on a 7-8 km average spacing;
- mute, dynamic corrections, equalization;
- stacking;
- no deconvolution or migration have yet been applied.

During winter 91-92, more detailed processing (stacking and migration) will be performed nearby and across the proposed drill sites.

Two cruises have recently recorded a detailed set of refraction data using OBS. Refraction processing has started only recently. This processing will start by filtering the seismic signal (filtering, stack, mute, AGC) in order to construct time/distance sections. The integration of MCS and refraction data will be concentrated near the proposed sites.

Finally, in June 92, dives with "Nautile" are scheduled along various cliffs on the Ivory Coast-Ghana Ridge.

SSP Consensus 13: The data set outlined in the proposal for Equatorial Transform Margin Drilling (346A), and the processing that has been carried out or is scheduled by proponents, should provide a high quality package for SSP assessment. The newly processed data should be deposited in the Data Bank for review at the Spring SSP Meeting. Existing heat flow values or newly gathered measurements would be useful in completing this package but are not deemed critical at this stage.

SSP also discussed the status of the complementary proposal: "Major oceanographic pathway, Equatorial Atlantic" by E.J.W. Jones. During our last meeting, SSP concluded that the proponents should provide better seismic profiles across and nearby their proposed sites. Pautot wrote to E. Jones in May and received a reply in July.

"We do not yet have any new seismic data to support our proposal but hope to process some data in the next few months when we have access to some funding. I should be very grateful if you would let me know the status of our proposal since this will affect the amount of pressure I can bring to bear on our administration here. I am very anxious that we support the highest priority sites with more seismic data."

This proposal was not considered further during this SSP Meeting because it was not included in the NAP. However, for completeness, our watchdog Pautot will write a letter to the proponents to point out the current ranking of the proposal.

4. New Jersey Margin Sealevel - proposal 348 + 348/A - KASTENS

Since the spring SSP meeting, the proponents for this program have submitted a revised drilling proposal, which has sites located along new MCS and single channel seismic lines collected from the R/V *Ewing* in 1990 (sites in the preliminary proposal were located on 1970's vintage industry seismic lines). The scientific objectives and drilling strategy have not changed in the new proposal. The proposed drilling plan has three sites in water shallower than 35m; it is suggested that these would be drilled by a commercial jack-up rig. The shallowest site proposed to be drilled by the *Resolution* would be in 51m water depth. The proponents must provide information on water current velocities in the vicinity of these shallow water (shelf) sites.

The quality of the *Ewing* seismic data is excellent, and the survey track forms a tight grid of dip and strike lines with numerous track crossings (Appendix 4: Table 4). To date, one of the *Ewing* MCS lines, the northernmost dip line in the grid, has been processed. The sites in the current drilling proposal are along this processed line, which was one of the few records examined by SSP at this meeting. Unfortunately, this particular line crosses a structural high, a Cretaceous-age igneous intrusion called the "Great Stone Dome," which may cause safety problems. The Great Stone Dome is of limited north-south extent, and the proponents feel that it will be possible to find sites on one of the

more southerly *Ewing* MCS lines which both meet the drilling objectives and avoid the Dome. Standard processing of the other MCS lines is in progress, and should be finished in plenty of time to plan for a drilling leg in the 1993 time frame. High-quality seismic processing of these data will be important for both pre-drilling site selection and for post-drilling interpretation of drilling results. We urge the proponents to undertake both post-stack time migration tests and pre-stack depth migration tests in order to assess the benefits of high-level processing for this important data set.

SSP Consensus 14: The data collected for the New Jersey Sea Level Mid-Atlantic Transect (proposal 348-ADD) is of excellent quality and sufficient quantity. SSP notes that seismic processing of high quality would benefit greatly both pre-drilling site selection and post-drilling scientific interpretation, and recommends proponents to pursue this goal in the interests of maximising the return from the surveys and potential drilling.

5. TAG Area: High-temperature Hydrothermalism - proposal 361/Rev -- LOUDEN -- (von Herzen proponent)

This proposal calls for bare rock drilling at up to 4 locations on the TAG area of the Mid-Atlantic Ridge in around 3700m water depth (Appendix 4: Table 5). Sites PRI-A,B,&C; PRI-2; PRI-3 and PRI-4 envisage penetrations of between 300m and 1km and will certainly require the DCS system. Some of the data required by SSP guidelines exists, none is presently in the Data Bank and there is an obvious need for significant amounts of site survey data. Seismics and heat flow data is more critical at this stage than rock coring but we suspect that this will also become a requirement and more bottom photography may also be needed. The Panel would expect these proponents to develop a site survey package to the level of that collected together for the Sedimented Ridges drilling and they should consider including the placing of marker transponders in any plans for further site specific surveys.

SSP Consensus 15: The bare rock drilling proposed for the TAG area (proposal 361Rev), with penetrations envisaged ranging from 300 to 1km, will require a site survey package rivaling that for the Sedimented Ridges. SSP recognises the existence of a great deal of TAG data

that could be lodged with the Data Bank but notes the obvious need for further seismic data (all "required/not available") along with heat flow, further photography and sampling and deep-towed magnetics.

As a matter of discussion SSP diverted to consider appropriate surveys for hydrothermal drilling. Von Herzen commented that one of the primary objectives of surveys for hydrothermal drilling is to characterize the fluid porosity and permeability in as much detail as possible. In addition to near-bottom seismics, electrical methods may also provide useful information because electrical conductivity is a well-understood proxy for porosity, which in turn may be related to permeability. Electrical sounding experiments may utilize either direct or fluctuating current methods, and in all cases should be carried out as close as possible to the seafloor for maximum resolution. For small scale (~ m to 10²m) surveys, a well-navigated submersible is probably required for precise positioning of the instrumentation. The Panel expects to return to electrical sounding methods in its deliberations of updates to its guidelines next meeting.

6. VICAP Gran Canaria - 380 (Rev) + Rev 2 - von HERZEN

A preliminary site survey data package should be compiled for SSP to accompany the VICAP proposal. From the proposal in the present prospectus, SSP is concerned as to the adequacy of the deep seismic (MCS) data for the purposes of identifying oceanic basement, and for showing lithosphere deformation. SSP is also concerned that the anticipated GLORIA survey data will not resolve regions of sediment slumping on longer time scales, which may result in localized hiatuses. Much more extensive high quality MCS and high resolution SCS data may be required to optimize drill hole location and achieve a complete composite section of the apron (Appendix 4, Table 6). The relevant commercial MCS data noted in the proposal should be incorporated in the data package for SSP. The MAP-1 (abyssal plain) reference site was not discussed by SSP as it was considered a late 'add-on' from another proposal which is currently under review by thematic panels and the Sea-level Working Group.

SSP Consensus 16: SSP requests that a preliminary site survey data package be assembled for VICAP as early as possible. The Panel is concerned that the quoted MCS data may not be currently adequate to address objectives relating to basement and lithospheric

deformation. Commercial MCS data referred to in the proposal might allay these concerns. The GLORIA survey planned to identify areas of sediment slumping will not address early slumping phases in the development of the apron and again extensive high resolution MCS and SCS will be a requirement.

7. Ceara Rise - proposal 388 - H. MEYER

Eight proposed drill sites on the eastern flank of the Ceara Rise address questions of Neogene paleoceanographic significance in the equatorial Atlantic. Objectives call for the last 10 ma. of undisturbed sediments being penetrated with the APC/XCB, in water depths of between 2800m and 4500m.

The original proposal has an inadequate site survey data set and no matrix has been prepared here. A U.S. site survey is planned, however, and is funded for mid '92. The survey will include high-resolution single channel seismics with Hydrosweep multibeam bathymetry, 3.5 kHz and 12 kHz echo sounding, 20 long sediment core stations and wide angle reflection and refraction seismics.

SSP Consensus 17: Although no adequate survey package yet exists to support the Ceara Rise proposal (388), a funded U.S. cruise proposes to carry out an optimal combination of geophysical techniques and thus the likelihood is that a complete data set will be available to support this shallow APC/XCB drilling.

8. Mediterranean Sapropels - proposal 391 -- KIDD

Kidd summarised the proposal for APC recovery of the Mediterranean sapropels that is rising high in the SGPP rankings although it is still a 'concept proposal' at this stage. No specific sites are as yet proposed but the proponents feel this is an easy exercise given the geophysical coring and detailed survey areas that already exist in the Eastern Mediterranean. Clearly some of the objectives might be teamed with the Mediterranean Ridge proposal (330). It was noted that the proponents had suggested APC recovery at the existing DSDP sites 374, 375/376 and 377, while it is known that many of the sapropel layers in the basin sites are resedimented 'sapropelic turbidites' which are unlikely to serve the purposes of the proponents' approach.

SSP Consensus 18: No specific sites are proposed in this "concept" proposal so SSP finds it difficult to

comment on this proposal; other than to note the proponent's suggestions that their objectives might be incorporated in the Mediterranean Ridge proposal (330) or in the APC coring at existing DSDP sites.

9. NAAG-DPG: Arctic Gateways - proposals 305, 320, 336 - LARSEN

SSP's evaluation of the NAAG site survey status is based on the data as presented in the proposals 305, 320 and 336 and a letter from E. Jansen 23.9.91 on subsequently-collected site survey data. Only part of the NAAG-DPG's programme is likely to get drilled in FY'93. In order to keep the program flexible enough to respond to the changing ice conditions, it is important that both the prime drilling sites mentioned in the DPG report as well as alternate sites meet the SSP requirements. We expect to be able to review the bulk of the relevant NAAG survey data at our spring meeting.

1) The YERMAC and FRAM Strait sites.

The data seem in general to be sufficient, however, high frequency processing for better definition of the sequence to be drilled is desirable. The occurrence of coarse ice-rafted debris at or near the seafloor should be evaluated.

2) The East Greenland Margin Sites

The positions of Sites Green 1 and Green 2 are not yet fixed. Site survey data will be collected by R/V "Hakon Mosby" in the summer of 1992, provided normal ice conditions exist in the area. EGM 1-4. - in general the data is probably adequate. EGM 1 and EGM 2 should possibly be moved to crossing seismic lines nearby. EGM 4 a crossing seismic line along the slope of the fan is needed and seismics with better resolution are required for safety considerations and in order to detect slides and other disturbances in the sequence. The seismic data illustrated in the proposals are very low frequency so details of importance for the planning and interpretation of the upper sedimentary sequence are not visible. Processing for better resolution is highly desirable. Heat flow data may be needed if BSR's are detected at any of the sites.

3) The Greenland Norway Transect.

Sites ICEP 1-4. and IP 2: according to E.Jansen new seismic data have been collected and processed. These data are probably sufficient to meet SSP's guidelines but they still need to be examined in detail.

4) The Southern Gateway

Site NIFR 1, north of the ridge: data probably is sufficient to meet SSP guidelines. SIFR 1 and the Denmark Strait sites:

locations have not been pinpointed no data is presented in the NAP however it is likely that sufficient data exists from these areas.

NAAG matrices appear as Appendix 4-Table 7

SSP Consensus 19: None of the seismic data for the North Atlantic-Arctic Gateway (NAAG) Program are in the ODP Data Bank and proponents are urged to begin sending their material soon. In order to keep the program flexible enough to respond to the changing ice conditions, it is important that both the prime drilling sites mentioned in the DPG report as well as alternate sites meet the SSP requirements. Additional site survey data, which will be collected in 1992, must be processed and ready for assesment as early as possible. In general, seismic data illustrated in the proposals are very low frequency so details of importance for the planning and interpretation of drilling results are not visible. Higher frequency processing or collection of high resolution SCS will be required. Data on frequency and size of ice-rafted debris should be compiled in order to select proper drilling methods. Sidescan coverage should be able to provide some indications of seafloor dropstone concentrations.

10. North Atlantic Rifted Margins-DPG: - volcanic - proposals 392- 396; non-volcanic - proposals 334, 365; Rev Galicia Margin 334 & GB-Iberia plume volc. proposal 363 ----- LEWIS -- (Louden & Kidd proponents on original proposals)

The NARM-DPG's programme contains a great deal of drilling, only some of which is likely to be considered for FY'93. SSP considered at length the DPG's site objectives in their distilled programme but will be unable to review actual data until its spring meeting.

The overall drilling objective here is to "describe and understand upper crust to upper mantle igneous and deformation processes related to continental breakup, and in turn how they relate to deeper mantle processes and dynamics".

Implementation:

Priority 1: "Carry out drilling-supported transect studies across selected margins, including conjugate pairs which show

strongly contrasting modes of continental breakup and encompass much of the variability in this process". Two end-member styles of continental breakup are:

- 1) multiple rift, non-volcanic, wide zone of continental crustal thinning margin, and
- 2) single rift, crustal thickening, highly volcanic with thick volcanic/igneous crustal accretion during breakup and early spreading.

Since the question of asymmetry in rifted margin development has been recognized, it is necessary to carry out conjugate margin studies. Drilling both volcanic margin pairs is of lower priority because seismic studies suggest strong symmetry for this type of rifted margin. In contrast, non-volcanic margins seem to develop asymmetrically, and hence require conjugate drilling. Basement sampling is of high priority for both types of rifted margin. Sediment-starved regions have been selected for achieving deep drilling objectives. Sampling of high-priority deep targets will require penetration in the 3-5 km range, and is considered a very high-priority long-term objective; a pilot site for such deep objectives is included in this proposal.

Transect Options:

The NARM-DPG considered a number of possible North Atlantic margin studies (see proposal list). The options evaluated include:

- 1) Newfoundland Basin/Iberia Abyssal Plain conjugate margins
- 2) North Flemish Cap/Goban Spur conjugate margins
- 3) Labrador/SW Greenland conjugate margins
- 4) SE Greenland/Rockall-Hatton Bank conjugate margins
- 5) NE Greenland/Vøring Plateau conjugate margins.

The Newfoundland Basin/Iberia Abyssal Plain and North Flemish Cap/Goban Spur transects were considered for non-volcanic margins drilling, and the SE Greenland/Rockall-Hatton bank and NE Greenland/Vøring Plateau transects were considered for volcanic margin drilling. The Labrador Sea transect bears on both volcanic and non-volcanic margin formation.

The top priority transects selected by the NARM-DPG are:

- 1) Newfoundland Basin/Iberia Abyssal Plain transect (non-volcanic),
- 2) SE Greenland/Rockall-Hatton Bank transect (volcanic),
- 3) Vøring margin/SE Greenland transect (volcanic).

Volcanic Margin Transect Drilling-Strategy:

The three transects are located in different positions relative to the Iceland hotspot, and, together with onshore continental flood basalt data and previous DSDP/ODP drilling from the southern Rockall and Vøring margins, will allow mapping of the general location and shape of the underlying hot spot/mantle plume during rifting and breakup.

Southeast Greenland Transect at 63° N - "EG 63"

This four-site transect is located along the 61° N flowline (61° N at the Reykjanes Ridge) in one of the simplest known volcanic margin settings characterized by seaward-dipping reflector sequences (SDRS). Drilling on this transect is intended to constrain the SDRS emplacement mechanism, temporal development of the volcanism, vertical and horizontal crustal accretion rates, chemical composition and variation across the SDRS zone. Site EG63-1 will sample the initial volcanism, which is likely to show large variations with stratigraphic level. Sites EG63-2 and EG63-4 will sample the central part of the excessive volcanic phase in an area of interpreted steady state wedge formation, where it is seismically well imaged. Site EG63-2 is planned as a deep basement site in order to recover more rift-proximal deposits, cyclicities, and lava stratigraphy. Site EG63-3 will sample the phase of waning volcanism and increased subsidence at about C24/C23, and is planned as a shallow basement well. Sites EG63-12, and 3 will provide a complete margin subsidence profile across a margin showing simple topography.

Vøring Margin Transect - "VM"

This transect is built on ODP Site 642, with an addition of three more sites. ODP site survey data in this transect is known to be good. The primary objectives are to determine the timing of volcanism with respect to rifting and breakup, the temporal patterns of volcanism, possible margin asymmetry, and the lateral variation in vertical motion of the SDRS. Plans include using existing and future industry wells on the shelf and upper slope to augment the landwardmost portion of the transect.

ODP Site 642, which was drilled through the innermost part of a seaward dipping reflector wedge during Leg 104, forms a key element of the transect. Three more sites, VM-3, VM-5, and VM-6 are proposed. Site VM-3 is located on the outer part of the same (main) seaward dipping reflector sequence as Site 642, with the goal of sampling the younger part of the volcanic wedge in order to complete the geochemical characterization of the wedge, and to constrain the timing of the transient excessive volcanism at this

margin segment. Site VM-3 is planned as a deep basement site for correlation with seismic data, to provide access to more rift-proximal deposits, and to increase stratigraphic coverage. Site VM-5 is located on the outer part of a second and slightly younger (anomaly 23/22) seaward dipping reflector sequence exhibiting a different style of renewed dipping reflections. This younger wedge is north of a small margin transform fault separating the two wedges, and drilling into this wedge will test geochemical and constructional differences across the margin. Site VM-6 is a reference hole sampling basement in an area of interpreted normal oceanic crust. The site will be located within the flow sector through VM-3 and VM-5 on crust of anomaly 23/21 age. The VM sites will provide important subsidence data on a structurally more complex margin, and together with industry data from the shelf provide a complete margin transect.

Southeast Greenland Transect at 66° N - "EG66"

This two-site transect lies between the 63° N and the original Iceland plume center. This transect is located along the 63° N flowline, and hence is related to the DSDP Leg 49 transect drilled across the Reykjanes Ridge. Site EG66-1 will sample, with deep basement penetration, the initial volcanism and rift environment, and provide stratigraphic data for correlation with nearby CFBs. Site EG66-2 will sample excessive volcanism close to its apparent termination about C22, and provide stratigraphic data for correlation with Leg 49 sites as well as serve as a reference to the similarly aged "young" dipping reflector wedge on the Vøring Margin.

Non-Volcanic Margin Drilling Strategy:

Conjugate rifted margins often display pronounced asymmetry in structural style. Often, a broad zone of attenuated continental crust has as a conjugate a sharp transition between unthinned continental crust and oceanic crust. The degree of asymmetry is likely related to the mode of lithospheric deformation during rifting (i.e pure shear or simple shear). One of the best means of determining whether rifting took place symmetrically or asymmetrically is to understand the subsidence history of conjugate rift zones. The amounts of syn- and post-rift subsidence constrain the amounts of crustal thinning relative to the entire lithosphere, and hence can indicate the degree of symmetry of this process.

An additional drilling objective is to define the geological properties of the ocean-continent transition (OCT). Geophysical observations have proven to be less than definitive in defining this fundamental lithospheric discontinuity, and the relatively

thin overlying rock units of some non-volcanic margins allow the OCT to be drilled.

The NARM-DPG proposes to drill a conjugate margin transect within a single geophysically-defined rift segment that includes the North Newfoundland Basin and the Iberia Abyssal Plain (IAP). They also propose a single additional site on the Galicia Bank, one segment north of the IAP.

The sites in the Newfoundland Basin, NB-1, NB-4A and NB-7A, span the zone of thin crust that has been variously identified as oceanic and thin continental. Site NB-1 is located at the landward side of the thin crustal zone and would provide information about pre-breakup setting, timing of rifting and breakup in the basin, and vertical position of the crust, before, during, and after rifting. Site NB-4 is located roughly in the center of the zone of thin crust and would sample post-rift sediment, the breakup unconformity, syn-rift sediment, and basement. Basement samples should resolve the question of the character, oceanic or continental, of the thin crust. Data from the sediment will constrain timing of rifting and breakup, and vertical movements of the crust. Site NB-7A is located on a basement ridge just landward of the J-Anomaly ridge, both of which are thought to be oceanic. If NB-7A is oceanic and the zone of thin crust is continental, this will date the oldest oceanic crust along the transect. If continental, the drilling will have precisely bracketed the OCT between this ridge and the J Anomaly ridge. Possible drilling surprises could include drilling a serpentinized peridotite ridge similar to that on Galicia Bank and thought to continue southward into the Iberia Abyssal Plain, conjugate to the Newfoundland basin.

The sites proposed for drilling in the Iberia Abyssal Plain, IAP-1, IAP-2, IAP-3, IAP-3B, IAP-4, and IAP-5, are concentrated in the middle and outer parts of the zone of thin crust, and fall into two groupings. The first group, sites, IAP-2, IAP-3, IAP-3B, IAP-4, and IAP-5, are part of a strategy to locate the OCT in the Iberia Abyssal Plain, to determine the extent of peridotite exposure in the basement, and to constrain the subsidence history of the margin. The first site, IAP-4, would sample the geophysically identified peridotite ridge. Drilling would follow at site W-2, landward of IAP-4, to sample the last, tilted continental block. In the absence of major surprises, it is proposed to proceed to site IAP-3B, just oceanward of site IAP-4, to drill what is interpreted to be the oldest oceanic crust. The objective is to define the OCT, constrain vertical movements of the crust, and understand the geochemistry of the early volcanism. If peridotite is not encountered in IAP-4, it is proposed to step either landward, if oceanic material were recovered, or oceanward, if

continental material were recovered. Two sites landward of IAP-4 (IAP-5 and IAP-2), and two sites oceanward of IAP-4 (IAP-3B and IAP-3) may be used in this strategy. The second group of sites, actually one site, IAP-1, is located over the wide zone of transitional crust analogous to that in the Newfoundland Basin. The site would probably require an entire leg to drill through post-rift sediment, the breakup unconformity, syn-rift sediment, and basement.

NARM-DPG also proposes drilling one site in Galicia Bank, GAL-1, which may lead to an exciting drilling opportunity. The "S" reflector in the Galicia Bank is interpreted to be a low-angle detachment fault penetrating to at least mid-crustal depths. The proposed site, GAL-1, lies where a reflector thought to be correlatable to "S" is shallow enough to drill.

NARM matrices appear as Appendix 4-Table 8

SSP Consensus 20: North Atlantic Rifted Margins
The data illustrations included in the NARM-DPG chapter of the North Atlantic Prospectus suggest that existing data for the four proposed transects are adequate for site selection, despite SSP's inability to carefully evaluate overall data quality from page-size presentations. Proponents involved in future site survey data acquisition (7/92, Newfoundland Basin; Fall 1991, Iberia Abyssal Plain; 1992 and 1993, East Greenland) should consult with SSP and PPSP watchdogs for specific site survey and safety concerns. SSP anticipates evaluating data packages of scheduled NARM drilling programs at its Spring'92 meeting.

11. **MARK area: long section of upper mantle (MAR Offset Drilling) - proposal 369, 369/Rev, 369/A -- HIRATA**
-- (Kastens proponent on survey proposal)

There already exists a considerable site survey data package for the MARK area (Appendix 4- Table 9). However we note that there are no transverse MCS lines which run through the proposed sites. There was much discussion of the lack of understanding of the deeper structure and the reasons for the uplifted target fault block. We consider that the data are presently insufficient for the objectives posed but expect that the additional site surveys, including the planned sidescan sonar cruise, will do much to update the data. Deep source seismic surveys may be prove to be desirable when SSP revises its guidelines.

SSP Consensus 21: There already exists a considerable site survey data package for the MARK area proposal (369A) but SSP notes that there are no transverse MCS lines which run through the proposed sites. We consider that the data are not yet sufficient for the objectives posed. Some attempt to understand the deep structure should be part of the survey stage, in particular, the reason for the existence of the uplifted target block should be addressed. SSP expects that the additional site surveys, including the planned sidescan sonar cruise, will do much to update the database. Deep source seismic surveys may prove to be desirable when SSP revises its guidelines.

12. Vema FZ: proposal 376/Rev - VON HERZEN

A preliminary site survey data package should be compiled for the Vema Fracture Zone proposal for detailed discussion at SSP's Spring 1992 meeting. All relevant existing data (**Appendix 4 - Table 10**) should be submitted to the Data Bank at LDGO (C. Brenner). SSP notes that some critical data types would be needed to reliably achieve the stated objectives of this proposal:

1) Seismic data with near-bottom source and (for seismic tomography) OBS experiments to determine velocities and structure over at least the uppermost 1 km at the drill sites that are planned for 0.5-1.0 km penetration ;

2) deep-towed sidescan data. The latter is scheduled to be obtained on a future cruise, although at a rather late date (FY 93) for the Atlantic drilling phase.

SSP Consensus 22: SSP considers that a reasonable site survey package could be gathered in support of the Vema FZ proposal (376 Rev) should planned survey cruises take place. A preliminary package should be submitted to the Data Bank for appraisal at SSP's Spring meeting. We note that critical sidescan surveys are not scheduled to take place until 1993 to complement the existing MCS and refraction data. SSP recommends additional collection of deep source seismics and OBS data.

SSP TOKYO DAY THREE

OTHER PROPOSALS:

The Panel had agreed [in 1(i) and 1(iii)] not to discuss the following proposal items during this meeting :

- 13. Barbados Accretionary Wedge - proposals 378/A & 372/A -- KIDD
- 14. West Florida Margin Sea Level - proposal 345/A -- MOORE
- 15. Caribbean Crust - proposal 343 -- FARRE
- 16. Cayman Trough - proposal 333 - KIDD

7. OTHER BUSINESS

(i) Revised watchdog assignments (Kidd)

Revised assignments for this meeting were dealt with in consensus item 1 at the beginning of the meeting and involved continuing members Farre and von Herzen. It is noted that because of member retirements discussed in (iv) below assignments will have to be revised for our Spring meeting. In particular we would expect Karl Hinz replacing Heinrich Meyer to take on his Ceara Rise watchdog role.

Action Item 7: Hinz to assume H.Meyer's watchdog role for Ceara Rise proposal 388

(ii) Feedback to Proponents (Blum)

The appropriate SSP feedback mechanisms were discussed with Blum at this stage and it was agreed that:

Action Item 8: SSP watchdogs should not contact proponents with news of SSP Tokyo assessments until it is known which of the NAP proposals were selected by PCOM for the FY'93 schedule. It should be stressed to these proponents that they should submit all available data relating to their proposals to the Data Bank for assessment prior to and during the next SSP meeting in April '92.

Discussion ensued on the likely effects of PCOM's scheduling at the Austin meeting. A number of members expressed the view that some of the more exciting and enticing drilling proposals were poorly supported by survey data and there would be pressure on PCOM to schedule them. In turn SSP might be pressured to "rubber-stamp" survey deficient proposals. These concerns resulted in the following:

SSP Consensus 24/Action Item 9: Kidd to relay to PCOM a request that, should they schedule drilling in FY'93 that is clearly dependent on the collection of further site survey data, PCOM should define a back-up alternate leg to take place in the event that the surveys are not completed. This is to put responsibility and pressure to deliver on proponents. SSP would in turn discuss cruise plans and required data processing, liaise closely with proponents and possibly meet more frequently in abbreviated session to view data with proponents.

(iii) PANCHM/PCOM Report

Members were asked to nominate items of concern that should be relayed by Kidd in his SSP Reports to the December Annual Meetings in Austin. Those included were:

Offset drilling strategy and appropriate surveys;

PCOM action on S-proposals;

Current responsive mode does not allow for detailed assessment of site survey packages.

How does SSP avoid conflict once proposals are on the schedule?

PCOM motion on data submittal for each scheduled leg.
SSP's membership procedures - see below.

(iv) Panel Membership (Kidd)

Kidd explained that this discussion of the Panel's membership was in response to a request for clarification from the JOIDES Office. There was a general recognition in JOIDES that Service Panel's might not have the same fixed rotation as thematic panels because continuity and the retention of expertise can be paramount. Nevertheless, non-US partner countries often have fixed terms of rotation and in many cases alternates waiting in the wings could bring valuable new expertise to the Panel (as for RBK himself!). After some discussion we agreed on the following to put to PCOM:

SSP Consensus 24: SSP recommends to PCOM that the term of membership of its Panel date from first attendance and that terms for SSP members be 4 years rather than 3 to allow for the full progression of a set of proposals during their stewardship.

A review of the expertise of the current membership indicated that all of the techniques of our newest guidelines are each covered by at least two members (A. Trehu brings further

refraction expertise when she begins her term). We recognise, however, that envisaged updates to the guidelines may mean we will need to recruit expertise in deep source seismics and deeply towed electrical and magnetic sounding techniques.

Turning to the periods of membership of the current SSP some are due to rotate off even given a four-year term:

Kidd 3 years extension on taking up Chair ends after Sept'92 meeting;

Lewis 4 years at Sept'92, will rotate off (note major watchdog portfolio for NARM);

Larsen 4 years but requested by ESF to extend to Sept'92;

Farre 6 months only;

Kastens 1.5 years;

Pautot 1 year;

Hirata 1.5 years;

Louden 3.5 years runs to Apr'92

Meyer H. 4 years at Sept'92, will rotate off and expected replacement is K.Hinz;

von Herzen 1.5 years;

Moore 1 year

Trehu term not yet begun;

Zverev term not yet begun.

SSP Consensus 25: Steve Lewis of USGS, Menlo Park and Heinrich Meyer of BGR, Hannover retire from the Panel after this meeting as part of SSP's review of its membership. The Panel expresses its thanks to Steve and Heinrich for their hard work as long-standing SSP members. Steve is recognised as a particularly tenacious "watchdog" whose activity will be sorely missed. SSP wishes him the best of luck as co-chief for the Chile TJ drilling.

The Panel discussed likely US replacements for Steve Lewis who would cover his particular MCS seismics expertise and Kidd has two names to relate to PCOM Chair Austin. They have a strong preference for one of these because of the onerous task of potentially taking over Steve's NARM role.

We went on to consider the Chairmanship since Kidd noted that his commitment to a term of at least 3 years as Chairman ends after the Autumn'92 meeting and he has an excellent UK alternate (Sinha) in waiting who currently never gets to attend. Members were asked to consider taking up the Chair and discussion was deferred to the Spring'92 meeting.

(v) Next meeting

The prime aim of the Spring '92 SSP meeting will be to advise PCOM on the status of scheduled FY'93 legs (and alternates?) after a thorough assessment of submitted data. Although initially it was considered that it was the turn of the USA to host SSP has actually run ahead of its normal 2 meetings in USA versus 1 in a partner country. Also there were competing claims as to whether we could view most data in the US or Europe. Birger Larsen offered to host at the Denmark Geological Survey where much of the NAAG data could be viewed by that time. Clearly we are hoping that much of the data would have been submitted to the Data Bank and copies out to Watchdogs and we still have to be concerned over Carl Brenner's ease of travel at that time.

It was agreed that **Kidd should request the next SSP meeting in Copenhagen hosted by Larsen at the Denmark Geological Survey spanning the dates 2nd, 3rd and 4th April 1992 (Action Item 11).** We should stand prepared to change the venue to the LDGO Data Bank should the prognosis on Carl at the end of January favour the move.

. Chairman warmly thanked our hosts at ORI for their hospitality and great help during the meeting. Naoshi Hirata is thanked for all his efforts in arranging our travel and accommodation. The Tokyo SSP meeting was formally closed at 1430 on 10th, October, 1991.