

**AGENDA FOR MEETINGS
ODP COUNCIL
and
JOIDES EXECUTIVE COMMITTEE**
Ramada Renaissance Hotel
1143 New Hampshire Avenue, NW
Washington, DC
20 - 22 June 1990

Wednesday, 20 June 1990 9:00 AM

Joint Session of ODP Council and JOIDES EXCOM Page number
(Co-Chairmen: D. Heinrichs and C. Helsley) Green

JS-A. Initial Business 005

1. Introduction and Opening Remarks
2. Adoption of Agenda

JS-B. Future of the Ocean Drilling Program 005

1. Perspective for a Post-1993 Program (JOI) 005
 - a. Overview
 - b. Drilling and societal concern
 - c. The Long Range Plan
2. Framework for Renewal (all members) 006
 - a. Timelines
 - b. Participation and budget, post-1993

Coffee and tea 10:15-10:30 AM

3. Preparation by the Advisory Structure (PCOM) 006
 - a. Scientific recommendations to JOIDES
 - b. Deep drilling
 - c. Assistance in the renewal process
4. Preparation by Program Management (JOI) 008
 - a. Identification of technological needs
 - b. Support of new technology: Diamond coring system, and high-temperature slimhole logging
 - c. Interaction with international global geoscience initiatives
 - d. Next performance evaluation, and general review of the program
 - e. Portfolios, brochures, and other publications
 - f. COSOD III as a focus on how to accomplish objectives
 - g. Meetings tailored to needs of international partners

Lunch 12:00 M - 1:15 PM

JS-C. Near-term Planning: The Next Four Years 008

1. Program Plan for Fiscal Year 1991 008
 - a. Scientific drilling objectives (PCOM)
 - b. Budgetary recommendations (BCOM)
 - c. Budgetary resolution (JOI)
 - d. Resource constraints, FY91 (NSF)

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| 2. | Program Objectives, Spring 1990 to Spring 1994 | 011 |
| a. | General Direction of the vessel (PCOM) | |
| b. | Planning for future engineering developments
(Science Operator) | |
| c. | Planning for future logging developments
(Wireline Logging Operator) | |

Coffee and tea 3:00 - 3:15 PM

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| 3. | Resources Needed for Near-term Objectives (JOI) | 015 |
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| a. | Funding outlook, remainder of FY89-92 Program | |
| b. | Participation of USSR | |
| JS-D. | <u>Present Status and Recent Past of the Ocean Drilling Program</u>
(Activities of past year, other than long-term and near-term
planning that has been reported) | 015 |
| 1. | Program Management Report (JOI) | 015 |
| a. | Personnel and other changes | |
| b. | Public relations | |
| c. | State of the FY90 budget to date | |
| 2. | Advisory Structure Report (PCOM) | 015 |
| a. | Summary of activities of JOIDES panels | |
| b. | JOIDES Office transfer to University of Texas | |
| c. | Miscellaneous actions, April 1990 PCOM meeting | |

Recess by 5:00 PM

Thursday 21 June 1990 9:00 AM

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| 3. | Science Operator Report (ODP-TAMU) | 017 |
| a. | Personnel and other changes | |
| b. | Principal drilling results in the western Pacific | |
| c. | Statistics, participation in the program | |
| d. | Status of publications | |
| e. | Status of engineering developments and test legs | |
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| 4. | Wireline Logging Services Report (ODP-LDGO) | 019 |
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| c. | Statistics, participation in the program | |
| d. | Status of tool developments and testing | |
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Coffee and tea 10:00 - 10:15 AM

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| JS-E. | <u>Membership Report</u> | 019 |
| 1. | Canada-Australia Consortium | |
| 2. | European Science Foundation Consortium | |
| 3. | Federal Republic of Germany | |
| 4. | France | |
| 5. | Japan | |
| 6. | United Kingdom | |
| 7. | United States | |

JS-F. Future Meetings 019

Adjournment by 12:00 M

Lunch 12:00M - 1:15PM

EXCOM Business Session 020

EX-A. Approval of Minutes of Previous Meeting

EX-B. Adoption of Agenda

EX-C. Future of Ocean Drilling

1. Extent of Active EXCOM Support
2. Scientific Issues
3. Technological Issues
4. Resources
5. Management Issues

Coffee and tea 3:00 - 3:15 PM

EX-D. Near-term Planning 020

1. Adoption of FY91 Program Plan, including Budget
2. Other near-term planning

EX-E. Old Business 021

1. Participation by Lesser-developed Countries
2. Nominations for next Performance Evaluation Committee

EX-F. New Business

Adjournment by 5:00 PM

Reception and dinner hosted by JOI Board of Governors

6:00 PM Reception

7:00 Dinner

Meridian House International

Friday, 22 June 1990; times and venues to be announced

ODP Council Meeting

JOI Board of Governors Meeting

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Joint Session of ODP Council and JOIDES EXCOM
(Co-Chairmen: D. Heinrichs and C. Helsley)

JS-A. Initial Business

- 1. Introduction and Opening Remarks**
 - Welcoming remarks, introduction of members and guests at the Joint Session, and comments about logistics.

- 2. Adoption of Agenda**
 - The general order of business follows the order of the past few EXCOM meetings. First is a consideration of the long-range future of ODP and the planning for it. Second is the immediate future, a one- to four-year period. Third is a set of reports of the present status and the immediate past. The Joint Session will conclude, in the traditional manner, with reports from the membership. There should be time for presentation of information, discussion of important issues, and identification of items for action by EXCOM.

JS-B. Future of the Ocean Drilling Program

- 1. Perspective for a Post-1993 Program (JOI)**
 - The National Science Board (of the US National Science Foundation) reviewed the achievements and aims of the Ocean Drilling Program. The mid-March presentation was coordinated by JOI. A summary of that presentation will be given here, to act as an introduction for new members of EXCOM and ODPC and refresh the memories of others.

- a. Overview
- b. Drilling and societal concern
- c. The Long Range Plan

2. Framework for Renewal (All members)

a. Timelines

- Exchange of information about stages in the preparation for a drilling program; probable dates for informal and formal discussions between partners, and decision points within each country or consortium.

b. Participation and budget, post-1993

- Estimation by NSE of the required level of international and US support for a drilling program. General discussion of expectations for approval of a drilling program of that size.

Coffee and tea 10:15-10:30 AM

3. Preparation by the Advisory Structure (PCOM)

a. Scientific recommendations to JOIDES

- Proposals for drilling were received at the JOIDES Office at a good rate through March. The general level of quality and quantity remain high, indicating a strong international interest in the use of drilling to solve exciting scientific problems. That also indicates that competition among proposals will continue to be heavy, ensuring that only the best programs will be drilled. Abstracts of proposals received since the last ODP Council meeting are attached, as are figures showing which objectives of the Long Range Plan are being addressed by new proposals.

- Recommendations by the thematic panels include, at present, a good mix of older highly ranked ones that have not yet had the opportunity for drilling (for technological reasons, incomplete surveys, or ship location) and new highly ranked ones that have benefited from new ideas and recent surveys.

b. Deep drilling

- Drilling deeper than the present limit of about 1.5 to 2 km is essential to reach important scientific objectives of the Long Range Plan. The prospects and problems with deep drilling concern PCOM and each of the thematic panels -- some panels more so than others. The Lithosphere Panel has deep crustal objectives; the Tectonics Panel and the Sedimentary and Geochemical Processes Panel plan to investigate the structure and fluids deep in the

margins of ocean basins, and Ocean History Panel can obtain some older records only by coring very thick sections.

- The Technical and Engineering Development Committee has assumed a major role in guiding JOIDES. Reports were received at the April PCOM meeting from the recent TEDCOM meeting, to which thematic panels sent scientists and TAMU sent engineers, and from the recent joint LITHP and TECP meeting, which was attended by engineers.

- A Working Group on Deep Drilling will be formed by PCOM as a result of its extensive questioning of Charles Sparks, Chair of TEDCOM, and Mike Storms, TAMU engineer. The PCOM Chairman, the TEDCOM Chairman, and the thematic panel chairmen are consulting to formulate an appropriate membership and mandate for the Working Group for presentation to PCOM at its August 1990 meeting. The group probably will first meet to augment the next TEDCOM meeting (26-27 September). It should include persons experienced in deep drilling (with appropriate oil-industry and Russian, German, and other hard-rock participation). This group will look at ways to proceed towards planning for deep drilling, including systems for coring and bore-hole control, platform required, estimates of time and costs, and advisory and operational structures in parallel or within JOIDES-ODP.

c. Assistance in the renewal process

- The perspective from PCOM. Each of the 16 members of PCOM reported his or her own assessment of the future of ocean drilling. Primarily because of the exciting objectives that can only be reached by drilling, almost all of the views were strongly positive, but a number of areas of concern were identified. PCOM decided to form an ad hoc committee to consider ways to aid the renewal process - by developing strategies for generating excitement and publicity about the scientific advancements and technological achievements of ODP, coordinating presentations in the partner countries, identifying and strengthening weak points, and improving the image that ODP projects outside of the marine geoscience community. Jamie Austin (next PCOM Chairman) chairs the committee; members are Margaret Leinen, John Malpas, Ralph Moberly, and Nick Pisias; a senior non-US scientist and science administrator is to be added to this "strategy" committee. Members of EXCOM and ODP Council having comments or suggestions are urged to contact one of the committee members.

- New technologies. Related to both of these areas of discussion and concern (deep drilling; renewal assistance) was the information PCOM received from some of the international partners that a critical part in renewal in their countries will be played by the perception that endeavors depending on new technologies will be part of the post-1993 ODP plans.

4. Preparation by Program Management (JOI)

- The most significant efforts by JOI in its role as program manager for the past year have been in preparation for program renewal. This section of the Agenda is the principal report by JOI to the ODP Council and to EXCOM. Some additional activities of JOI are covered in Agenda item JS-D.1.

- a. Identification of technological needs

- b. Support of new technology: Diamond coring system, and high-temperature slimhole logging

- c. Interaction with international global geoscience initiatives

- Note that EXCOM will be asked to approve the mandate for liaison with these groups, to become part of the JOIDES Terms of Reference.

- d. Next performance evaluation, and general review of the program

- EXCOM members were asked to bring nominations to this meeting.

- e. Portfolio, brochures, and other publications

- f. COSOD III as a focus on how to accomplish objectives

- g. Meetings tailored to needs of international partners

Lunch 12:00 M - 1:15 PM

JS-C. Near-term Planning: The Next Four Years

1. Program Plan for Fiscal Year 1991

a. Scientific drilling objectives (PCOM)

- The Science Plan part of the FY91 Program Plan was determined by PCOM at its Annual Meeting in late November 1989. The first part was a confirmation of three legs that had been tentatively scheduled a year earlier: two in the southwestern Pacific, namely Vanuatu and Lau-Tonga (legs with mainly tectonic and lithospheric objectives that were the final legs planned in the former regional-panel mode), and an engineering leg to prepare for

lithospheric drilling in the eastern equatorial Pacific by attempting to clear Hole 504B for deepening and set two hard-rock guidebases on the crest of the East Pacific Rise. The second part was a set of legs selected from among candidate programs in the easternmost Pacific: Hydrothermal Processes at Sedimented Ridges 1, Eastern Equatorial Pacific Neogene Transect, Lower Crust at 504B; in the event Lower Crust at 504B cannot be drilled, East Pacific Rise Bare Rock drilling was to have been substituted.

- Adjustments to the FY91 Program Plan. At its late April meeting, PCOM adjusted its plan for the next fiscal year after hearing about trans-Pacific transits, the desirability to schedule time for one of the international global geoscience initiatives, and results of the meeting of the East Pacific Rise Detailed Planning Group. The Program Plan is virtually the same through Leg 135, Lau Basin, ending at Suva about 12 February 1991; the vessel will, however, transit east through Hawaii rather than through Tahiti.

- Inserted is a leg of about 2 weeks (Honolulu to Honolulu) to drill and case to basement a re-entry hole north of Hawaii for eventual emplacement of a broad-band seismic station for comparison with island seismic stations. The work is proposed for the international Federation of Digital Seismic Networks.

- The following leg is for engineering operations to log and to attempt to mill the junk from 504B so that at a later time the hole may be deepened through the sheeted dike complex.

- Next will be a paleoceanographic investigation, the Eastern Equatorial Pacific Neogene Transect, ending in earliest summer 1991.

- Then the ship is to drill Sedimented Ridges 1, a leg to investigate hydrothermal processes in the sediment blanket on the crest of Juan de Fuca Ridge. This is the first one of two possible legs in this program.

- The last leg in FY91 will have lithospheric objectives. It will be either deepening of 504B if that hole is cleared, or by a joint Engineering-Science leg on the East Pacific Rise. The Program Plan tentatively ends in Panama on 30 October 1991. If the last FY91 leg is to deepen 504B, then the first FY92 leg will be the joint Engineering-Science leg on the East Pacific Rise.

- These decisions were expressed in the following PCOM motion (13 for, 0 against, 3 abstain):

Following transit from the Lau Basin, a FDSN Test Hole north of Oahu will be drilled for a pilot study for an ocean-floor seismic station. This drilling is to be followed by the following legs in the order: Engineering 3A at 504B, Eastern Equatorial Pacific Neogene Transect, Sedimented Ridges 1, and either 504B (if Engineering 3A is successful) or Engineering 3B at the East Pacific Rise (if Engineering 3A is not successful). Engineering 3B will follow 504B if Engineering 3A is successful.

- Relation to Four-year General Direction of the Vessel. It was pointed out that the insertion of legs, even short ones, would distort the balance between oceans and programs in the four-year General Plan (which is Agenda Item JS-C-2.a below), the motion for which had been passed a few hours earlier. The proposer of the motion for the 4-year plan pointed out, and PCOM agreed, that the preferred scenario of October 1992 as a transit date from Pacific to Atlantic can be adjusted for such additions.

b. Budgetary recommendations (BCOM)

- The Budget Committee met 8-10 March 1990 at JOI Inc. NSF provided a target figure for FY91 of \$39.3 M from US and partner-country funds. EXCOM in 1988 had projected FY91 costs as \$40.0 M. Requests totaled \$41.6 M.

- BCOM's recommendations to JOI stressed these points: With minor exceptions the JOI-JOIDES, TAMU, and LDGO base budgets were approved as requested. Special Operating Expenses (SOE must be at least 4% of the total budget less the JOI-JOIDES budget) were assigned in 4 categories:

1. Diamond Coring System, an additional \$843 K to TAMU to accelerate DCS development to prepare for drilling in the FY91 Program Plan; exact distribution of DCS effort to be based on outcome of Leg 132;
2. High-temperature logging, \$180 K to LDGO to repackage slimhole tools donated by ARCO;
3. Publications, \$172 K to TAMU to print 4 volumes beyond the normal 12 volumes in FY 91 base budget; and

4. Additional response to JOIDES advice:

- \$450 K to replenish drilling supplies after abnormal recent losses
- \$137 K for shipboard measurements and information handling, including computers (\$43 K for CD-ROM and \$94 K for which PCOM will forward specific recommendations to JOI based on priorities of SMP and IHP)
- \$43 K for one-year trial for partial support of a specialist to reduce Formation Microscanner logs on board; and
- \$30 K for BRG to join CONOCO's logging-test consortium.

- NSF had stated it would consider arguments for additional resources above its target figure for a real increment in engineering and technology development. JOI is negotiating with Sandia Labs to adapt high-temperature tools for ODP purposes. BCOM recommended that JOI propose to NSF for \$300 K for one set of 3 tools, and an additional \$150 K for a duplicate set.

- FY91 budgetary flexibility resulted from a number of factors being favorable simultaneously, and it is not realistic to suppose these conditions will occur together again.

- A copy of the BCOM Report is appended.

c. Budgetary resolution (JOI)

- The present state of negotiations between JOI and the subcontractors and between JOI and NSF, as based on the BCOM Report and other considerations.

d. Resource constraints, FY91 (NSF)

- The present expectations for FY91 funding within the Foundation, and possibility of changes.

2. Program Objectives, Spring 1990 to Spring 1994

a. General Direction of the vessel (PCOM)

- The thematic ranking of programs is summarized in tables and a map in this Agenda briefing book. The highest ranking proposals will be mentioned briefly to demonstrate to the ODP Council and EXCOM the range of candidates for drilling in the near future.

- Comments about the 4-year general plan. By definition, not all programs can be "highest" ranked, but proponents not in the general 4-year plan should not despair. PCOM must emphasize that this plan will be amended each spring, by adding to the distal end and probably by modifying some of the middle. On the other hand, proponents in the highest groupings are not automatically assured of drilling. The program plan of each year can hold only a few legs from several programs. Therefore all proponents should, if possible, sharpen their proposals, and all panels should keep an open mind about all proposals.

- General direction of the vessel for the next 4 years. After examining how the four thematic panels ranked the programs, discussing the top rankings, and seeing how those programs were distributed on the globe, PCOM approved the following motion (16 for, 0 against, 0 abstain):

Recognizing the thematic priorities of the advisory panels, the Planning Committee has decided that the *JOIDES Resolution* will operate in two areas in the four years beginning April 1990, i.e., the Atlantic Ocean north of the equator and the Pacific Ocean. A preferred scenario is that the ship will continue in the Pacific until October 1992 and transit then to the Atlantic for a program that will continue through the completion of this 4-year plan.

This means that beyond the legs in the current FY90 and 91 Program Plans, FY 92 will be in the Pacific, and FY93 and at least the first one-half of FY 94 will be in the North Atlantic.

- Preparation for FY92 Program Plan. PCOM will decide on its FY92 Plan at the Annual Meeting in Hawaii in late November 1990. Essentially, that will require selecting six legs in the Pacific from among those ranked highest by the thematic panels (that will be either six science legs, or one engineering-science leg followed by five science legs if deepening 504B ends FY91).

- A prospectus will be assembled that will include 9 programs (up to 10.5 legs in this time-frame) as candidates for FY92 Pacific drilling. The present overall ranking by thematic panels is about as follows:

- Chile Triple Junction (I or I & II)
next a relative gap
- Atolls, Guyots, and Aprons (I or I & II), *about the same as:*
- Cascadia Margin
next a relative gap
- Hess Deep, *about the same as:*
- Sedimented Ridges II
- East Pacific Rise Bare-rock I
- North Pacific Transect
next a relative gap
- Bering Sea
next a relative gap
- Peru Gas Hydrates

The prospectus will hold the reports from the East Pacific Rise DPG (which met in April) and Cascadia Margin DPG (which meets in early August), certain reports held over in the third CEPAC Prospectus, and any update from the proponents of the Hess Deep and Peru Gas Hydrates proposals (they have been asked to bring their proposals, to the extent that they can, up to the level of other programs given in the CEPAC Prospectus).

- Panel activities. The Site Survey Panel in its July meeting will scrutinize the data for the 9 programs. The thematic panels, at their fall meetings, will rank the programs in the prospectus; that probably will resemble the just-completed ranking, but may differ depending on DPG reports, SSP analysis of data, number of legs and their sequence, tool development, or newly reviewed proposals from any ocean. PCOM will determine the Program Plan for FY92 in November.

- Preparation for Atlantic drilling in FY93 and early FY94. PCOM approved two DPGs, and, on panel advice and partner-country nominations, will establish their memberships and mandates at the August PCOM meeting. The two are the North Atlantic Rifted Margins DPG and the North Atlantic Arctic Paleoceanographic Gateway DPG. The rifted margins DPG is to consider both volcanic and non-volcanic ones.

Proponents of "the top five North Atlantic programs" of each thematic panel have been informed that they should be endeavoring to bring their proposals to maturity so that they will be ready if chosen for drilling. Two of the panels do not at this time have 5

Atlantic programs north of the Equator, and there is some duplication between panels; the present overall ranking by thematic panels is about as follows:

- New Jersey Margin Sealevel
- Northernmost Atlantic Paleooceanography: Arctic Gateway
next a relative gap
- North Atlantic Non-volcanic Rifted Margins
- MARK Area: Long Section of Upper Mantle
- TAG Area: High-temperature Hydrothermalism
- North Atlantic Volcanic Rifted Margins
- Barbados Accretionary Wedge
- Vema FZ: Transition, Layer 3 to Mantle
- Equatorial Atlantic Transform Margins, *about the same as:*
- Vema FZ: Transition, Layer 2 to Layer 3
next a relative gap
- Cayman Trough
- Mediterranean Gateways
- West Florida Margin Sealevel

As has been stated in the recent past, thematic panels will have the opportunity each year to revise their rankings.

**b. Planning for future engineering developments
(Science Operator)**

- Long-term engineering developments and planning underway at College Station are centered on improving the Diamond Coring System (DCS), in terms of greater depth capabilities, integration and improvement of components, potential use as a mini-riser, and compatibility with other systems. The Vibra-Perussive Corer is expected to hold promise for core recovery in unconsolidated sandy sediments. Other current engineering developments are listed in item JS-D-3.e below; improvements in many of these systems is expected to continue through the next several years, on the requests and advice of users, TEDCOM, PCOM, and the engineering staff.

**c. Planning for future logging developments
(Wireline Logging Operator)**

- Long-term logging developments and planning underway at Lamont include logging-while-drilling (an important subset of measurement-while-drilling), improved geochemical logging

(abundances of 25 to 30 elements), in situ magnetic-reversal stratigraphic logging, and upgrading to fiber-optic cables.

Coffee and tea 3:00 - 3:15 PM

3. Resources Needed for Near-term Objectives (JOI)

- Present evaluation of EXCOM's analysis in 1988 of the requirement of additional funding to meet program needs in FY89-92 Program and to prepare for future drilling.

4. Estimation of Resources (NSF)

- a. Funding outlook, remainder of FY89-92 Program
- b. Participation of USSR

JS-D. Present Status and Recent Past of the Ocean Drilling Program (Activities of past year, other than for long-term and near-term planning that has been reported)

1. Program Management Report (JOI)

- a. Personnel and other changes
- b. Public relations
- c. State of the FY90 budget to date

2. Advisory Structure Report (PCOM)

a. Summary of activities of JOIDES panels

- Most JOIDES panels have met twice since the last meetings of EXCOM (October 1989) and ODPC (June 1989). The thematic panels completed their reviews and rankings of proposals from any ocean, and reported to PCOM for its April meeting. The service panels have answered countless PCOM questions and provided excellent advice; some of their recommendations form parts of this report to EXCOM.

- Panel Chairmen. Susan Humphris is asked to chair LITHP effective now. Eldridge Moores will be asked to chair TECP effective after its fall meeting. PCOM is concerned with the demands placed on its panel chairmen. Change from a regional-plus-thematic to a thematic-only mode open to any proposal in any ocean led to an intensive review process for new and revised proposals that has been very demanding of panel and panel-chairman time.

- CEPAC-DPG. PCOM received the final CEPAC prospectus, and thanked and formally disbanded the group.

b. JOIDES Office transfer to University of Texas

- On 1 October 1990, at the beginning of FY91, the JOIDES Office will transfer to the Institute for Geophysics of the University of Texas at Austin. Art Maxwell will be Chairman of the Executive Committee, and Jamie Austin will be Chairman of the Planning Committee. Dr. Peter Blum, of Switzerland and nominated by Japan, will be the non-US liaison member in the JOIDES Office. The UTIG JOIDES staff is being assembled.

- Preparation for the 2-4 October 1990 EXCOM Meeting in France, however, will be the responsibility of the HIG JOIDES staff; Chuck Helsley will chair the meeting and Ralph Moberly will report for PCOM. Art and Jamie will commence their responsibilities upon the adjournment of the meeting.

c. Miscellaneous actions, April 1990 PCOM meeting

- APC orientation. The multi-shot orientation tool will be used in low-latitude APC sites, in an attempt to improve the usefulness of cores for reversal stratigraphy. At sites with multiple APC holes, decisions about additional runs beyond the first one will be made onboard.

- Proposal proponents. PCOM affirmed its earlier rule for itself and JOIDES thematic panels that, during discussion and voting (ranking) of a proposal, any of the proponents listed on a proposal who are present as members or guests must leave the room. Further, PCOM agreed that it is not proper at a meeting that will lead to voting to ask a member or guest who is a proponent for a "summary" or "clarification" of some point, because proponents of other proposals (being absent) do not have the same advantage of direct communication with the panel or committee.

- Whole-round sampling. The routine blind sampling of whole-core cylinders for organic geochemical analysis will be evaluated by SMP in consultation with SGPP and TAMU, and a draft policy recommendation made to PCOM.

- 504B. PCOM accepted LITHP's recommendations for logging, milling operations, and drilling ahead at 504B.

- ODP Publications. PCOM accepted IHP's recommendation to retain Editorial Review Boards. TAMU is asked to set the deadline for leg synthesis chapters 3 months after the submission deadline for the last "results" manuscript.

- Synthesis publications. A group of PCOM members and panel chairmen who were participants on legs in the Indian Ocean have taken over responsibility for a thematically based scientific meeting on results of the 1987-1988 drilling campaign, and for a

subsequent volume, to be published independently of ODP. A similar synthesis of drilling results in the Western Pacific is being planned.

- Isotopes. It was reported to PCOM that the Shipboard Measurement Panel, on advice from thematic panels and operators of oceanographic vessels, will recommend a policy of allowing no solutions, of either unstable (radioactive) or enriched stable isotopes on the drilling vessel. As SMP met shortly before PCOM and no panel minutes were available for PCOM to study, PCOM had to postpone formal setting of policy to its next meeting.

- Other results. As some of the most pleasurable parts of the meeting, PCOM heard interesting accounts of engineering activities at TAMU, of drilling and logging operations on recent legs, and of scientific results of legs 127, 128, and 129. Overall, we are pleased with these activities, and thank the panels for their work that laid the groundwork for these successes of the recent past.

Recess by 5:00 PM

Thursday 21 June 1990 9:00 AM

3. Science Operator Report (ODP-TAMU)

a. Personnel and other changes

- Dr. T.J.G. Francis has been selected as the new Deputy Director of the Ocean Drilling Program at Texas A & M University. Dr. Louis E. Garrison has retired. Tim Francis, formerly of the Institute of Oceanographic Sciences, and recently the Planning Committee member from the U.K., comes from a strong background in geophysics and instrumentation, and has participated in several DSDP and ODP projects. Lou Garrison was a drilling participant and JOIDES adviser during DSDP, and has earned high respect as Deputy Director. He has been one of the chief reasons for the success of the drilling program.

b. Principal drilling results in the western Pacific

- One year ago Leg 126 was being drilled in the Bonin island Arc. Since then these legs have been drilled in the western Pacific:

- Leg 127, Japan Sea 1, concerned with the origin of the southern part of the Japan Sea, a complex back-arc basin.

- Leg 128, Japan Sea 2, same area, including seismic and geoelectrical experiments.

- A dry docking, with transits to and from Singapore.

- Leg 129. Old Pacific, to sample open-ocean Jurassic sediments and their underlying crust that formed on a rapidly spreading ridge.
- Leg 130. Ontong Java Plateau, a depth transect of the Neogene sediments, and penetration through older sediments into the plateau's crust.
- Leg 131. Nankai Trough, sampling, logging, and geophysical experiments where the toe of the accretionary prism is first deformed in the deep sea trench.

c. Statistics, participation in the program

- A close balance is maintained between US participants on the JOIDES Resolution and non-US participants, and also among the various non-US partners. Participation by Co-Chief Scientists and Shipboard Scientists will be shown.

d. Status of publications

- The production schedule for Initial Reports volumes and Scientific Results volumes has improved. The schedule will be shown.

e. Status of engineering development and test legs

- The Diamond Coring System and its components: Secondary heave compensator; top-drive system and winch; integrated platform, mast, and power-pack systems; core-barrel assembly; diamond core bits; bottom-hole assembly bits; latch for center bit; riser connector -- tensioning tool; mini-hard-rock guide base; casing hanger; back-off sub; modified re-entry cone; and DCS 3-1/2 inch drill rod string.
- Other Engineering developments underway at TAMU include the following: Motor-driven Core Barrel (project was formerly termed "Navidrill development"; Sonic Core Monitor; Drill-in Casing System (has had a successful test); Advanced Piston Corer (design upgrade); Breakaway Piston Head; Drilling/Straddle Packer; Pressure Core Sampler; Conical Side-entry Sub; and the Vibra-Percussive Corer.
- Third-party tools continue to receive liaison and technical support from TAMU's Development Engineering group. These include the Lateral Stress Tool, Geoprops Probe, Pressuremeter, Flow Isolation Plug, and Downhole Flow Meter.
- Leg 132. Engineering II, is underway at the present time. Its principal objective is to test the DCS in three environments advised by JOIDES as important for future scientific work, where

drilling and core recovery have been exceptionally difficult in the past: (1) very recent brittle ocean crust, (2) limestone rubble, and (3) alternating hard and soft strata.

- Attempts to clear 504B for deepening is more of an engineering operations leg than an engineering tests leg. The next extensive testing will take place on Engineering III, on the East Pacific Rise crest at either the end of 1991 or beginning of 1992, depending on success at 504B.

f. Other problems and progress

4. **Wireline Logging Services Report (ODP-LDGO)**
 - a. Personnel and other changes
 - b. Principal logging results in the western Pacific
 - c. Statistics, participation in the program
 - d. Status of tool developments and testing
 - e. Other problems and progress

Coffee and tea 10:00 - 10:15 AM

JS-E. Membership Report

1. Canada-Australia Consortium
2. European Science Foundation Consortium
3. Federal Republic of Germany
4. France
5. Japan
6. United Kingdom
7. United States

JS-F. Future Meetings

- A proposal has been made to hold the June 1991 Joint Meeting of the ODP Council and EXCOM on the West Coast of the United States, to coincide with a port call of the *JOIDES Resolution*. The MOUs call for an annual meeting in Washington, D.C.

- France had extended an invitation to EXCOM, to meet 2-4 October 1990 in Villefranche or Nice.

Adjournment by 12:00 M

Lunch 12:00M - 1:15PM

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EXCOM Business Session

EX-A. Approval of Minutes of Previous Meeting

EX-B. Adoption of Agenda

EX-C. Future of Ocean Drilling

- Further discussion and any action on such issues as:
 1. **Extent of Active EXCOM Support**
 2. **Scientific Issues**
 3. **Technological Issues**
 4. **Resources**
 5. **Management Issues**

Coffee and tea 3:00 - 3:15 PM

EX-D. Near-term Planning

1. **Adoption of FY91 Program Plan, including Budget**
 - EXCOM is asked to endorse the FY91 Program Plan proposed by PCOM, and its Budget, as proposed by BCOM and negotiated by JOI. The PCOM motion in November 1989 for the Science Plan part of the FY91 Program Plan was modified in April 1990 by insertion of a short leg near Hawaii, as in this motion:

PCOM Motion

Following transit from the Lau Basin, a FDSN Test Hole north of Oahu will be drilled for a pilot study for an ocean-floor seismic station. This drilling is to be followed by the following legs in the order: Engineering 3A at 504B, Eastern Equatorial Pacific Neogene Transect, Sedimented Ridges 1, and either 504B (if Engineering 3A is successful) or Engineering 3B at the East Pacific Rise (if Engineering 3A is not successful). Engineering 3B will follow 504B if Engineering 3A is successful.

(Motion Natland, second Cita; vote: for 13, against 0, abstain 3).

The report of the Budget Committee is in this Agenda Briefing Book. Tom Pyle will have presented the current budget situation yesterday morning.

2. Other Near-term Planning

- EXCOM may wish to discuss and propose action on scientific and engineering preparation for the 4-year general plan, or other aspects of near-term planning.

EX-E. Old Business

1. Participation by Lesser-developed Countries
2. Nominations for next Performance Evaluation

Committee

3. Adoption of Terms of Reference and Mandate, Liaison Groups

PCOM Motion

PCOM recommends and forwards to EXCOM for approval the following proposed mandate and terms of reference for Liaison Groups.

- 1.1 Liaison Groups may be established between JOIDES and other international geoscience programs having a strong interest in ocean drilling.
8. Liaison Groups: Mandate. As a formal means of communications, and especially to facilitate the exchange of beneficial information, JOIDES may establish a Liaison Group with any international geoscience program that has a strong interest in ocean drilling. Such groups may be approved by PCOM on the nomination by JOI, Inc. For each Group, typically a Co-Chairman and one additional member will be appointed by an international program to represent it, although with mutual consent the membership of a Group may be larger. PCOM and EXCOM members will not be members of Liaison Groups. Typically, Co-Chairmen will be invited to meet with PCOM at the summer PCOM meeting.

(Motion Brass, second Watkins; vote: for 12; against 0; abstain 4)

note: numbers 1.1 and 8 are sections in JOIDES Terms of Reference

EX-F. New Business

Adjournment by 5:00 PM

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Reception and dinner hosted by JOI Board of Governors
6:00 PM Reception
7:00 Dinner
Meridian House International

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Friday, 22 June 1990; times and venues to be announced:

ODP Council Meeting

JOI Board of Governors Meeting

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**ABSTRACTS OF THE ODP PROPOSALS
RECEIVED AT THE JOIDES OFFICE
(since June 1989)**

JOIDES Number: 328/A

Date: 6/89

Title: Proposal for ODP Drilling on the Continental Margin of East Greenland, North Atlantic

Proponents: K. Hinz, H. Meyer, H. Roeser, M. Block, M. Hemmerich and H. Miller

Drilling at two sites on the East Greenland continental margin is proposed in order to sample the outer wedge of seaward-dipping reflectors and the regional seismic unconformities observed there. Objectives for the two sites include: (1) Differentiation between kinematic models for the emplacement of seaward-dipping structures (reflectors); (2) investigation of the relationships between dipping-reflector sequences and continental flood basalt, and magnetic anomalies; (3) study of conjugate volcanic features of the East Greenland and Norwegian continental margins; (4) obtain samples of all major volcanic periods/zones, necessary to determine the petrological, geochemical, magnetic and kinematic variability of extrusive igneous rocks of the Early Tertiary "North Atlantic Volcanic Event" in space and time.

JOIDES Number: 329/A Rev.

Date: 7/89

Title: Cretaceous Paleocommunication Between the North and South Atlantic Seas: Formation of the Atlantic Ocean

Proponents: J. Herbin, J. Mascle, L. Montadert, M. Moullade and C. Robert

In order to study the Cretaceous paleocommunication between the North and South Atlantic seas, the recovery of Mesozoic rocks is proposed from three sites off the intermediate oceanic margins of Sierra Leone, Liberia, and on the Demerara Rise in the largely unexplored Equatorial Atlantic. These sites would provide new and essential data to determine the kinematic and structural evolution and the paleoceanographic, paleoclimatic, and paleoenvironmental conditions. The main objectives for drilling in this region are: (1) To discover the nature and age of the first sediments deposited on the oceanic crust, as well as the age of the crust itself, and to reconstruct the initial position of the continental masses; (2) to study the formation of sedimentary facies during the opening phase as consequences of the kinematic evolution and particularly the black shales that were deposited at one and the same time in the North and South Atlantic up to the Turonian-early Coniacian; and (3) to understand better the relationships between volcanism, sedimentation and tectonic events during the movements of the equatorial fracture zone.

JOIDES Number: 330/A Date: 7/89
 Title: **Mediterranean Ridge: An Accretionary Prism in a Collisional Context**
 Proponents: M. Cita, A. Camerlenghi, L. Mirabile, G. Pellis, B. Della Vedova, W. Hieke, S. Nuti and M. Croce

The study of two accretionary prisms has been planned by ODP for 1989-90 (Nankai Trough and Cascadia Trench). The need to study a wide spectrum of prisms in order to compare data from different tectonic settings provides the framework for this proposal to drill in the Eastern Mediterranean region. Preliminary sites are located along the crest of the Mediterranean Ridge and outer slope of an accretionary prism (southern transect); on the Ionian abyssal plain, outer slope of an accretionary prism and re-occupying DSDP Site 125 (southwest transect); and on the crest and flank of the Mediterranean Ridge (western transect). This proposal will be updated, and additional drill sites will be proposed after the completion of two site surveys planned for the Fall of 1989 and mid-1990. General objectives are: (1) deformation pattern and fluid circulation in an accretionary prism; (2); fluid circulation in an accretionary prism versus brine circulation; (3) Plio-Pleistocene paleoceanography; (4) the comparison of stress and fluid circulation in areas of different deformational styles; and (5) the history of sapropels and explosive volcanic activity.

JOIDES Number: 331/A Date: 7/89
 Title: **"Zero-Age" Drilling on an Extinct Spreading Axis: The Aegir Ridge, Norwegian Sea**
 Proponents: R. Whitmarsh, W. Weigel, H. Miller and F. Avedik

By drilling at the center of the Aegir Ridge, a sediment-covered, but no longer active (circa 32-26 Ma) mid-ocean ridge in the Norwegian Sea, the proponents hope to avoid problems caused by high temperatures and corrosive hydrothermal fluids anticipated at actively spreading ridges. This work is proposed as a strategic intermediate step pending the development of equipment to overcome the practical problems mentioned above. General objectives are the study of magma processes and hydrothermal processes associated with crustal accretion, and investigation of the structure and composition of the lower oceanic crust and upper mantle. A preliminary site is proposed to drill into the frozen magma chamber (2000-3000 mbsf), into crust which has not undergone substantial normal faulting and within which the fissures have been sealed by secondary hydrothermal mineralization, as well as to sample the result of decaying axial hydrothermalism on sediments in the "dying" rift. The final choice of site will be constrained by sediment thickness in the median valley axis, pending further site survey work.

JOIDES Number: 332/A Date: 7/89
 Title: **Florida Escarpment Drilling Transect**
 Proponents: C. Paull and M. Kastner

The drilling of a three-site, east-west transect across the edge of the western Florida continental margin at 26°01'N is proposed. The objectives of the transect are to determine: (1) Patterns of fluid circulation through the carbonate platform and rates of lateral exchange with seawater, (2) the diagenetic history of the platform edge as it relates to the patterns of fluid

circulation, (3) the effects and geologic record of seafloor brine seeps with respect to sulfide mineralization, deposition of chemosynthetically produced organic carbon-rich layers, and the escarpment's erosional history, (4) the stratigraphic development and facies succession across a carbonate continental margin, (5) the paleoceanographic history of the Gulf of Mexico and (6) the facies pattern in the distal submarine fan. A Florida Escarpment drilling program will elucidate the geological and geochemical processes which form and modify carbonate continental margins. Drilling these sections to recover the fluids which circulate between the oceans and its edges should be within the capabilities of the JOIDES Resolution. This drilling program was recommended by the ODP working group on carbonate banks and atolls. (1 Leg)

JOIDES Number: 333/A

Date: 7/89

Title: **Tectonic and Magmatic Evolution of a Pull-apart Basin: A Drilling Transect Across the Cayman Trough, Caribbean Sea**
 Proponents: **B. Mercier de Lepinay, E. Calais, P. Mann, E. Rosencrantz, M. Perfit and T. Juteau**

This proposal presents a drilling program of six sites for the Cayman Trough, a 1400-km long pull-apart basin and present transform boundary in the Northern Caribbean. The central and eastern parts of the basin are sediment-starved, hence basement structure is accessible to drilling. Drilling in the eastern end of the Cayman Trough (2 sites) provides a unique opportunity to examine the timing and direction of propagation of faulting in a pull-apart setting. Information on age of subsidence, subsidence patterns and basement lithology would assist both in the interpretation of the basement structure of deeply buried (inaccessible) pull-aparts, as well as the interpretation of exhumed and deformed pull-aparts in ancient mountain belts. Drilling on the eastern and western sides of the trough (3 sites) will provide information about the inception and controls on a spreading ridge and a magmatic history test of depth versus age relations. The objectives for a single site in the mid-Cayman Spreading Center is direct sampling of layer 3 and its magmatic evolution. Additional objectives for all sites are the state of stress in strike-slip zones and Caribbean paleoceanography-constant versus episodic plate motions. (1.5 Legs)

JOIDES Number: 334/A

Date: 7/89

Title: **The Galicia Margin New Challenge: Drilling Through Detachment Faults, Lower Crust and Crust-mantle Boundary**
 Proponents: **G. Boillot, E. Banda and M.C. Comas**

Extensive drilling of basement at the Galicia Margin, N.E. Atlantic, is proposed for two sites, one on the west Galicia Margin and the other on the Iberian Abyssal Plain. Proposed work seeks answers to major geodynamic questions raised by previous drilling at the Galicia margin, Leg 103, concerning the upper lithosphere and the ocean-continent crustal transition. The general thematic objectives of the proposal are: (1) To test the simple shear model for the stretching of the lithosphere during rifting; on the Galicia Margin, the best candidate for this shear zone is the S seismic reflector; (2) to determine by sampling the nature of the basement beneath the S reflector; depending on models and hypotheses, it could be underplated

gabbros, stretched lower continental crust, or serpentinite resulting from alteration of the uppermost mantle by synrift and/or postrift hydrothermal activity; and (3) to estimate the westward extension of the serpentinite seafloor.

JOIDES Number: 335/E

Date: 7/89

Title: Drowned Atolls of the Marshall Islands:

Paleoceanographic, Lithospheric and Tectonic Implications

Proponents: S.O. Schlanger and F.K. Duennebieer

This drilling program in the northern Marshall Islands consists of eight proposed sites atop drowned atolls of Eocene (Harrie Guyot), Cretaceous (Sylvania Guyot) and unknown (SCH Guyot) age now at depths of 1300-1400 m and at nearby deep-water archipelagic apron settings. This proposal replaces JOIDES Number 202/E, entitled "Geologic Evolution of the Northern Marshall Islands," submitted to JOIDES on 9 January 1986 as part of the report of the USSAC workshop on carbonate platforms. Information from proposed sites will be applicable to a broad set of major problems: (1) Drilling atop Sylvania and Harrie Guyots will provide information on the chronology of reef growth and drowning related to sea-level paleolatitudinal history and vertical tectonics; (2) investigate the "paradox of drowned reefs"; (3) determine the chronology of volcanic events in the region as related to the passage of the Marshall Islands over thermal anomalies; (4) obtain reliable paleolatitudes and formation dates for these edifices; (5) determine the sources of Marshall Islands basalts and their relationship to the DUPAL/SOPITA anomalies; and (6) drilling at Sylvania, Harrie and related archipelagic apron sites will provide a data base for studies of depositional and diagenetic histories of archipelagic carbonate sequences and the chronostratigraphy of acoustic reflection horizons as related to paleoceanography. (1 Leg)

JOIDES Number: 336/A

Date: 7/89

Title: Arctic to North Atlantic Gateways, Oceanic Circulation and

Northern Hemisphere Cooling

Proponent: J. Thiede

The target areas proposed for drilling are arranged in terms of two transects: One transect extends from the Fram Strait along the East Greenland continental margin to the Denmark Strait following the eastern boundary of the East Greenland Current. The other transect extends from the northern Iceland Plateau to the south of the Iceland-Faeroe Ridge. Drilling in the central Fram Strait will provide data on the depth of evolution of the oceanographic gateway and the initiation and evolution of shallow- and deep-water flow through this passage. Proposed sites at the East Greenland continental margin are intended to (1) date the onset of the East-Greenland Current, monitor the deep-water formation and surface waters in the Greenland-Iceland Sea, (3) determine their influence on the variability of the polar front and northern hemisphere paleoclimate, and (4) decipher the evolution of the Greenland ice sheet. Sites on the Iceland Plateau are proposed to describe the paleoenvironmental conditions following the very early rifting stages of the Norwegian Basin. Proposed drilling of the Iceland-Faeroe Ridge will yield key information on the early spreading stages of the southern Norwegian Sea, the subsidence history of the Iceland-Faeroe Ridge and the

early phases of warm surface-water inflow from the North Atlantic—a key parameter for northern hemisphere climate. Drilling in the Denmark Strait is proposed for a better understanding of the development of oceanic gateways and their influence on oceanic circulation patterns and climatic conditions during Cenozoic times in the Nordic Seas; it is aimed at determining the exchange rates of water masses between the Nordic Sea basins and the North Atlantic.

JOIDES Number: 337/D

Date: 7/89

Title: Ocean Drilling Program Tests of the Sedimentary
Architecture of the Exxon Sea-level Curve

Proponents: R. Carter, C. Fulthorpe, L. Carter, J. Beggs, K. Miller and
G. Mountain

A multiple-leg program is proposed consisting of four groups of sites in the New Zealand region. A transect consisting of four sites will cross known mid-late Pleistocene shelf-margin sequences, offshore Wanganui Basin, western North Island. The main objective there is to establish the sedimentary architecture of known sea-level controlled sequence systems tracts, both for its intrinsic importance and for comparison to pre-Neogene sequences. A second transect will cross identified Miocene Exxon-type seismic sequences in Canterbury Basin, eastern South Island. The objectives for this transect are threefold: To establish the facies architecture of presumed pre-Plio-Pleistocene sea-level controlled seismic sequences, to test the global applicability of the mid-miocene part of the Exxon sea-level curve, and to establish the validity, and document the sedimentology, of a high-frequency part of the Exxon sea-level curve. Two sites, one on the Canterbury shelf platform and one on the flank of the Campbell Plateau, are proposed to establish the paleoceanographic nature of the 29 Ma event in the southwest Pacific. Lastly, a pair of sites in the Great South Basin, southeast of South Island, are intended at establish a high-resolution stratigraphic record through well developed southern hemisphere Paleocene sequences.

JOIDES Number: 338/D

Date: 8/89

Title: Absolute Amplitude of Neogene Sea-Level Fluctuations from
Carbonate Platforms of the Marion Plateau, Northeast
Australia

Proponents: C. Pigram, P. Davies, D. Feary, P. Symonds and G.
Chaproniere

Drilling is proposed along an E-W transect of five sites on the Marion Plateau, the most southerly of the marginal plateaus located along the northeastern margin of Australia. The principal objective of the proposal is to determine the amplitude of Neogene second- and third-order sea-level cycles. This objective, identified in the OH panel white paper, COSOD II, and the El Paso Workshop (EOS, March, 1989), can be achieved in this region because sites that have undergone identical subsidence histories can be located within two phases of platform accretion. Furthermore the Marion Plateau is a low-relief carbonate bank-slope-basin system that OHP considers essential for comparison with proposed Pacific atoll transects. As subsidence can be eliminated as a control on the Marion Plateau, it is an ideal area in which to define the amplitude of Neogene glacioeustatic events. A further objective is

to obtain information on the changes in oceanography and climate as the world's ocean changes from an equatorial to a gyral circulation pattern. This information will help decipher the history of evolution of the East Australian Current and the effects of these factors in the development of subtropical platforms.

JOIDES Number: 339/A

Date: 8/89

Title: **Paleoceanographic Record of the Benguela Current and Associated High-Productivity Areas: a Proposal for Drilling Transects on the Southwest African Margin.**

Proponents: **L. Diester-Haass, P.A. Meyers, G. Wefer and H. Oberhansli**

Four transects totaling eleven APC/XCB sites are proposed on the upper slope and outer shelf of the southwest African margin. The purpose of these sites is to expand and to refine the partial record provided by DSDP Site 362/532 of the paleoceanographic and paleoclimatic changes associated with the development of the Benguela Current system since early Miocene times. The current itself evidently has increased its northward extension across the Cape Basin and into the Angola Basin over this time, partially due to strengthening of the Agulhas Current and partially due to changes in the Antarctic polar front. As the Benguela Current moved northward and intensified, the zone of coastward upwelling and associated high productivity shifted and potentially expanded. Furthermore, the extent and intensity of the Benguela Current directly influence the South Atlantic Equatorial Current and its transport of heat across the Atlantic. At DSDP Site 362/532, the effects of southern hemisphere glacial-interglacial cycles appear as carbonate dissolution cycles, productivity cycles, and continental sedimentation cycles. Both sealevel changes and climatic changes are recorded in these cycles. The proposed transects, located above the CCD in a passive margin area of high sedimentation rates, can provide high-resolution records of these important processes, and they add important new dimensions to the single-site record now available.

JOIDES Number: 340/D

Date: 8/89

Title: **Evolution of Foreland Basins - a Record of Tectonic, Climatic and Oceanographic Change from the Northern Australian Margin**

Proponents: **M. Apthorpe, M. Bradshaw, P.J. Davies, D.A. Feary, R. Hillis, D. Jongsma, C.J. Pigram, M.G. Swift and P.A. Symonds**

This drilling proposal is divided into two sub-proposals.

- 1) Neogene/Quaternary collisional tectonism and foreland basin development across the northern Australian margin. This region is probably the only place on earth where ocean drilling can be used to understand the early tectono-stratigraphic evolution of foreland basins. Also this region is a modern analogue of the ancient orogens in western North America and Europe. (5 sites).
- 2) Cenozoic global climate evolution - the record across the northern Australian margin. The stable isotope record within sedimentary sequences across the northern Australian margin will document many of the major events in the dramatic evolution of global climates during the Cenozoic related

to the northward movement of Australia following breakup with Antarctica. A separate objective will be to obtain a Late Cretaceous biostratigraphic reference section for the eastern Indian Ocean. (5 sites).

JOIDES Number: 341/A

Date: 8/89

Title: Global Climatic Change as Measured through a Continuous Late Wisconsinan Quaternary Record with Special Emphasis on the Holocene

Proponents: J.P.M. Syvitski

This proposal presents a drilling program of two sites in the Saguenay Fiord and in the St. Lawrence Estuary (Laurentian Trough). Both sites have an extensive supporting database of high-resolution geophysics, have an expanded (thick) sequence of fluvially transported and pelagically-deposited Holocene sediment that past research suggests to be resolvable at an annual level of resolution. Geophysical data also suggests at least one, if not two, deglacial sequences that properly analyzed could provide a measure of the rates of climate change going into and out of the last glaciation and its associated ablation.

JOIDES Number: 342/A

Date: 8/89

Title: Growth Mechanics and Fluids Evolution of the Barbados Accretionary Prism

Proponents: R.C. Speed, G.K. Westbrook, J.C. Moore, A. Mascle, X. Le Pichon, S. Dreiss, D. Karig, M. Langseth

This drilling program in the Barbados addresses the mechanics and fluids evolution of accretionary forearcs, emphasizing mechanisms and episodicity of accretionary prism growth and progressive deformation; sources, pathways, and rates of flowing fluid; and time dependence of events and physical properties. Sites proposed for these investigations are in partial transects across the Barbados forearc and the immediately adjacent Atlantic ocean floor. The questions posed are global and applicable to an understanding of the tectonic evolution of convergent margins and some ancient orogenic belts in general, materials budgets, and processes of consolidation and defluidization of sediments under compression. It is believed that a maximum advance toward solutions can be gained by drilling within a single forearc whose features change systematically in response to lateral changes of major controlling variables. The Barbados forearc amply provides such a natural laboratory because of large changes on strike in the major variables, thickness, rheology, and permeability of incoming sediment. (3 to 4 legs).

JOIDES Number: 343/A

Date: 8/89

Title: Drill in a Window of the Cretaceous Volcanic Formation in
the Caribbean Sea

Proponents: A. Mauffret and A. Mascle

The evidences of a window in the Cretaceous volcanic flow give the opportunity to reach the oceanic basement at a moderate depth of penetration (1 sec. max., 1100 m) and to solve the main problems posed in the Caribbean region as defined during the ODP symposium on Caribbean (nov. 1987). The first objective is to study the composition of the volcanic rocks below the Coniacian volcanic flow. A second objective is to drill (0.8 sec., 900 m) and to reach the rough basement at the top of Pecos Fault Zone so as to complete the sampling of the Caribbean crust and also to precise the neotectonics. (7 sites).

JOIDES Number: 344/A

Date: 8/89

Title: Proposal to Study the Western North Atlantic Jurassic
Magnetic Quiet Zone by Ocean Drilling

Proponent: R.E. Sheridan

The origin of the Jurassic magnetic quiet zone remains problematic. Possible origins now include 1) typical oceanic crust spreading when the earth's magnetic field had a constant normal polarity for an extended interval (10-15 my), 2) typical oceanic crust spreading when the earth's magnetic field had a rapidly reversing polarity (greater than 7.5 reversals/my), or 3) typical oceanic crust spreading when the earth's magnetic field was either of constant normal polarity or rapidly reversing, but with a weaker magnetic field intensity. It is proposed that Site 534 be reentered and drilled through 500 m of basaltic flows to get a good probability that a reversed polarity be detected. Another site should be drilled into basement as further verification and it is proposed a new site close to the Site 603 of DSDP

JOIDES Number: 345/A

Date: 8/89

Title: Drilling Proposal for the West Florida Continental Margin,
Gulf of Mexico: Sea Level and Paleoclimatic history

Proponents: J.E. Joyce, H.T. Mullins, L.R.C. Tjalsma and S.W. Wise

Carbonate ramps offer unique opportunities to study the interactions between ocean basins and surrounding land masses, and evaluate the timing and amplitude of global sea level change. The West Florida margin is an excellent example of a carbonate ramp which meets the general requirements for a potential drilling area to address sea level change. A transect of 6-7 sites, strategically positioned along an optimal, high-resolution seismic reflection profile extending from shallow (90 m.) to deep water (1125 m.), will provide documentation of the timing of sea level change and bracket amplitudes of Cenozoic sea levels. The proposed deep-water sites provide the basis for multi-disciplinary paleoclimate studies addressing 1) the timing and magnitude of Pliocene meltwater discharge from mid-latitude ice sheets, 2) the extent of phosphorite deposits along the West Florida margin especially within the Tertiary, and 3) the history of Loop Current circulation in the eastern basin.

JOIDES Number: 346/A Rev.

Date: 8/89

Title: A Proposal for Scientific Drilling on the Equatorial Atlantic Transform Margin

Proponents: J. Mascle, Ch. Basile, J.P. Herbin, M. Moullade and Ch. Robert

This proposal is dealing with both the evolution of transform margin and gateways within the Equatorial Atlantic. It intends to promote a better understanding of sedimentary, tectonic, and others processes (diagenesis, vertical motion, magmatism) appearing to be specific at transform extensional margins. This drilling proposal is part of an integrated program devoted to the structure and evolution of the Ivory coast-Ghana margin, considered as one of the best example of transform margin. (7 sites).

JOIDES Number: 347/A

Date: 8/89

Title: Late Cenozoic Paleooceanography, South-Equatorial Atlantic

Proponents: G. Wefer and W.H. Berger

Drilling is proposed along 3 transects in the area of the equatorial Atlantic: east and west of the south-equatorial MOR and south-east of São Paulo. The purpose is to reconstruct the dynamics of the transequatorial heat transport in relation to the North Atlantic Deep Water (NADW) formation, intermediate currents, and productivity variations throughout the Neogene. Comparison of records from eastern and western transects allows assessment of east-west asymmetries in the productivity, and of strength of surface circulation. At depth, these comparisons allow reconstruction of NADW and AABW transport patterns. The transect near São Paulo is to recover the record of heat import of the North Atlantic through the South Equatorial Current. Also, a north-south comparison in the west-equatorial region will give clues to the vigour of NADW flow, from the inclination of the abyssal thermocline separating NADW and AABW.(1 leg).

JOIDES Number: 348/A

Date: 8/89

Title: Upper Paleogene to Neogene sequence stratigraphy: the Ice House world and the U.S. Middle Atlantic Margin

Proponents: K.G. Miller, N. Christie-Blick and G.S. Mountain

The upper Paleogene to Neogene section of the U.S. middle Atlantic margin is ideally suited for the study of changes in relative sea level recorded in passive margin sediments. Features unique to the region during this time interval include:

- rapid sedimentation (occasionally above 200m/m.y.) that provides an unusually high-resolution record during a time of known glacio-eustatic change;
- tectonic stability that simplifies subsidence considerations;
- mid-latitude setting that optimizes biostratigraphic potential, and yields sufficient carbonate for Sr-isotope stratigraphy; and
- abundant reconnaissance -quality seismic profiles, well samples and logs, boreholes and outcrops that can guide efforts to concentrate on features that best reveal the record of sea-level change.

These unique possibilities will be exploited in drilling 11 possible sites on the shelf and upper slope of the Mid-Atlantic continental margin. The objective will be to determine the geometry and age of Oligocene to Miocene depositional sequences, and to evaluate the role of relative sea-level changes in developing this record. It will be evaluated possible causal links between ice-volume (glacio-eustatic) changes inferred from the deep sea $\delta^{18}O$ record and depositional sequences dating from this Oligocene to Miocene "ice house world". This program should define precisely the ages of these depositional sequences and test models of sedimentation and relative sea-level changes.

JOIDES Number: 349/A

Date: 8/89

Title: Drilling into the Clastic Apron of Gran Canaria: Evolution of a Linked System Volcanic Ocean Island-Sedimentary Basin

Proponents: H.-U. Schmincke, U. Bednarz, A. Freundt, P.v.d. Bogaard, K. Hoernle, M. Menzies, W. Weiger and G. Wissmann

This proposal presents a drilling program of five holes into the volcanic oceanic island of Gran Canaria (Canary Islands). The drilling targets are the ultimate aim of the interdisciplinary research project VICAP = *Volcanic Island Clastic Apron Project*. The purpose of this project is to study the physical and chemical evolution of a confined system "asthenosphere - lithosphere - seamount - volcanic island - sedimentary basin" by drilling into the proximal, medial and distal facies of a volcanic apron, which formed by submarine volcanic activity during the early seamount stage, explosive volcanic activity in shallow water and on land, lava flows and pyroclastic flows entering g the sea, and erosional activity.

The clastic apron is expected to contain material from throughout the entire evolution of the volcanic complex, including material no longer present on the island and - most importantly - material from the unexposed and unaccessible submarine stage. A major element of the program will be high precision single-crystal age dating with the aim of monitoring the island and basin evolution in time slices as detailed as 100.000 years.

JOIDES Number: 350/E

Date: 9/89

Title: Plio-Pleistocene Sedimentation and Plate Deformation : Gorda Zone Deformation off Northern California.

Proponents: M. Lyle, R. Jarrard, S. Halgedahl and R. Karlin

This proposal is to study the processes of deformation in young ocean crust by examining rotation of crust in the Gorda Deformation Zone through a series of 3 holes along an isochron approximately 4 millions years old. Sedimentary studies will be used to determine the history of rotation of different crustal regions within the plate. It could also be possible to measure the present state of stress in the crust. The Gorda Deformation Zone is also well-located for the study of both palaeoceanographic history of the Californian Current system and the evolution of the chemistry of temperate north Pacific deep waters. Finally, Late Pleistocene turbidite sections can be found nearby to hemipelagic sediment sites of paleoceanographic interests, and sampling of the coupled sites will be important to study the history of turbidite deposition from the northwest coast of North America. (1/4 leg).

JOIDES Number: 351/C

Date: 9/89

Title: ODP Proposal for Bransfield Strait

Proponents: J.B. Anderson, P.F. Barker, I.W.D. Dalziel, M.R. Fisk, J.D. Jeffers, R.A. Keller, R.D. Larter, R. Meissner and J.L. Smellie

This proposal presents a drilling program in the Bransfield Strait -an young active back-arc basin that formed during the past 4 Ma along the remaining active portion of the Antarctic Pacific margin. Sedimentation is dominated by glacial marine processes and their associated lithologies. It forms an ideal natural laboratory for a multidisciplinary, multinational drilling project. The main objectives are :

- Continental lithosphere extension in a convergent margin setting.
- Driving forces responsible for the formation of ensialic back-arc.
- Petrogenetic processes operating during initial back-arc rifting.
- Global climatic, environmental and sea level changes.
- Hydrothermal systems in active back-arc basins.
- Aspects of Andean-type orogenesis.

It is proposed to address these problems by drilling through sediment into crystalline basement to get a complete sedimentary record of the opening of the strait as well as samples of crystalline basement for geochemical and petrological studies of the transition from continental to oceanic crust in a back-arc setting. This would set Bransfield Strait as a example of an ensialic suprasubduction zone back-arc basin. (10 sites).

JOIDES Number: 352/E

Date: 9/89

Title: Drilling into Layer 3 of East Pacific Crust at the Mathematician ridge.

Proponents: D.S. Stakes and D.A. Vanko

The phenomenal drilling results of ODP Leg 118 dramatically illustrated the advantages of drilling into gabbro that has been tectonically unroofed. The proponents present a drilling program into oceanic crust created at a fast-spreading center, the Mathematician Ridge, a failed rift in the Eastern Pacific which may provide the best "tectonic windows" for fast-spread crust. Also the Mathematician Ridge is far from any large offset transform intersections and thus avoids the inherent ambiguity of ridge-transform intersection. The main objective to drill this site will be to recover a continuous section of oceanic Layer 3 and the optimal site will start at or near the dike-gabbro boundary to avoid ambiguity of lithostratigraphic horizon. A second major objective of a drillsite for the Mathematician Ridge would be to determine the role of ductile normal faults in young plutonic rocks created at fast-spreading centers. A third objective would be to study the mechanics of rift failure. The relationship between the axial structures and post-rift failure structures and magmas could be determined. (1 site).

JOIDES Number: 353/C Rev.

Date: 9/89

Title: Antarctica Peninsula, Pacific Margin

Proponents: P.F. Barker and R.D. Larker

A length of the Pacific margin of the Antarctic Peninsula has subducted a series of ridge crests of the Pacific-Phoenix plate boundary. The ridge crest collision event migrated along the margin, from the SW 50Ma ago to the last collision in the NE 3-5.5Ma ago. Subduction before collision had a simple geometry and, after collision, subduction stopped. Thus, the evidence of this event is well preserved, in the young ocean floor and in margin sediments. Since collision the margin has gently subsided (rather like a young passive margin) and glacial erosion has provided sediment to a large prograded wedge which extends the outer shelf.

Drilling on the Antarctic Peninsula Pacific Margin would investigate:

- 1.the history of uplift and subsidence of the fore-arc resulting from subduction of a ridge crest. Fore-arc regional thermal metamorphism, from the same event, and heat flow;
- 2.the assumption that global eustatic sea-level change through the Plio-Pleistocene has been caused by changes in grounded ice volume;
- 3.the history of Antarctic Peninsula glaciation over the past 5 to 10Ma;
- 4.the usefulness of continental rise turbidites and hemipelagics as indicators of cyclicity in continental glaciation.

JOIDES Number: 354/A

Date: 9/89

Title: Late Cenozoic History of the Angola/Namibia Upwelling System.

Proponents: G. Wefer and W.H. Berger

It is proposed to drill 4 transects off Angola and Namibia, in order to reconstruct the upwelling history of the region between 5°S and 25°S, for the last 6 millions years. The region represents one of the most important upwelling systems in the ocean. The northernmost transect is to recover the record of productivity variations in a complex area, dominated by river input (Zaire), seasonal upwelling, and a pelagic offshore divergence. The transect off mid-Angola provides a "low-productivity" standard for comparison, with the possibility of detailed correlation between the margin record and the pelagic record. The transect off southern Angola targets the northern end of the continuous, high productivity portion of the Angola/Namibia upwelling system. The Namibia transect, finally, is to provide the record of maximum upwelling in this region.

JOIDES Number: 271/E Rev/2

Date: 9/89

Title: Proposal for limited APC coring on seamounts of the California coast during a possible transect of that coast in 1991 and initial response to OHP feedback on proposal 271/E, "Neogene Upwelling and Evolution of the California Current System".

Proponent: J. Barron

The California current constitutes the major eastern boundary current of the northeastern Pacific Ocean and sits astride one of the most climatically and oceanographically sensitive mid-latitude gradients in the world ocean. Of equal importance, the associated continental margin of California represents one of the four principal regions of coastal upwelling and high productivity

in the modern ocean. A series of north-south (and east-west, if possible) transects across the path of the California Current are proposed in order to:

- 1-Develop models of how the California Current system has evolved in response to major polar cooling events and increased latitudinal thermal gradients in the later part of the Neogene.
 - 2-Determine the width of the California Current through time and the character of gradients both across and along the track of the current.
 - 3-Determine whether fluctuations in the California Current have responded in phase or out of phase with high latitude climate changes including mid Miocene buildup of ice on Antarctica, later Neogene initiation of glaciation in the northern hemisphere.
 - 4-Determine seasonality affects (e.g. upwelling) first evolved and/or accelerated during Neogene time. Related questions include when is the earliest record of El Niño-like events and their durations?
 - 5-Search for patterns possibly related to closing of major Pacific gateways including the Isthmus of Panama.
- (2 to 3 APC cores, 1 to 2 weeks of drilling time).

JOIDES Number: 233/E Rev/2

Date: 9/89

Title: Update Proposal to the Ocean Drilling Program for Fluid Process and Structural Evolution of the Central Oregon Accretionary Complex.

Proponents: L.D. Kulm, J.C. Moore, B. Carson, G.R. Cochrane, B.T.R. Lewis, P.D. Snaveley Jr., R von Huene

This document is an update of the Proposal to the Ocean Drilling Program referenced as 233/E and it concentrates solely on the specific drill holes and objectives previously described in Proposal 233/E.

The overall objective is to study active and past fluid venting and dewatering processes occurring within the accretionary complex and to relate these processes to the structural and stratigraphic framework. Specific objectives include the following:

- 1-Determine the sources of pore fluids and hydrologic conditions above the decollement.
- 2-Determine the nature of fluid expulsion pathways.
- 3-Determine the subsurface distribution and magnitude of carbonate cementation, diagenesis, and Ca-transport through the accretionary prism in the different structural settings and during the various stages of deformation.
- 4-Evaluate the transition from a hydrologic regime with significant intergranular fluid towards one dominated by flow along faults.
- 5-Define the characteristics of fluids and the physical properties of the associated deposits at incipient deformation zones in the abyssal plain, seaward of the main deformation front.
- 6-Determine the velocity structure of the accretionary complex and its relationship to diffusive regional dewatering versus localized vent expulsion sites.

JOIDES Number: 356/A

Date: 9/89

Title: Denmark Straits, Greenland Scotland Ridge, Jan Mayen Ridge (North Atlantic)

Proponents: P.P. Smolka and F. Strauch

The main objectives of this proposal are:

- 1- To get an insight into Neogene climatology and 21st century's climatic conditions.
- 2- To study sediments immediately above/below the unconformity separating the glacial from the preglacial interval.
- 3- To gain detailed knowledge on the subsidence history of the Greenland Scotland Ridge (GSR), especially its impact on feedback processes caused by enabled / disabled inflow of warm atlantic watermasses modulating the precipitation history supporting / inhibiting glaciations in the Norwegian-Greenland-Sea (NGS).
- 4- To understand the initiation and the history of the East Greenland-Irminger- and East Iceland Current, exchange mechanism of water between NGS and Atlantic Ocean.
- 5- To decipher the oceanographic history of the Faeroe Shetland Channel including its paleoenvironment to end the discussion about the mode and intensity of deep water exchange.
- 6- To study the subsidence history and the sedimentological paleoenvironment of the East Greenland passive margin.
- 7- To supply knowledge to the paleoenvironmental and paleoclimatic history of the Jan-Mayen Ridge.

It is proposed to drill 9 sites.

JOIDES Number: 357/E Rev.

Date: 10/89

Title: Proposal for Axial and Off-Axial Drilling on the EPR near 12°50'N

Proponents: R. Hékinian, J. Francheteau, F. Avedik, F. Albarede, Ph. Pezard, G. Thompson, D. Bideau

A program for East Pacific Rise ridge crest drilling is proposed near 12°50'N in a region extensively surveyed since 1981. This ridge crest segment located about half way between major transform faults (Orozco and Clipperton) is bounded by two minor overlapping spreading center discontinuities. The ridge crest is characterized by a well defined and prominent axial ridge cut by a small continuous graben in which an extensive set of hydrothermal vents has been located and sampled using primarily the deep submersible Cyana. The prime objective of the proposed suite of holes is to understand the inter-related magmatic, structural and hydrothermal processes active at a fast spreading ridge crest and in an off-axis volcanic environment (seamount). The first priority (EPR 13-1) is a single deep hole about 2 km west of the axis, outside the central zone of active fissuring and normal faulting intended to penetrate as close as possible to the top of the well-defined axial magma chamber i.e. about 1.5 km below the sea floor.

A second hole (EPR 13-2) about 500m deep is sited adjacent to an active discharge zone, the Chainette vent area, and is aimed at drilling the upper crust of the axial fissured zone. The hole should penetrate through the permeable extrusive layer of the newly emplaced crust and into the underlying dike complex to characterize the thermal field and permeability.

A third hole (EPR 13-3) also 500m deep located about 6 km east of the ridge axis on the southern flank of a small 300m high seamount (southeastern seamount) should provide a short transect and enable comparisons between hydrothermal processes associated with ridge crest and off-axis volcanism. The hole, as planned, would traverse the whole constructional edifice.

JOIDES Number: 286/E Add.

Date: 10/89

Title: Drilling the Layer 2/3 Transition at Hole 504 B

Proponent: K. Becker

This update is intended to firstly discuss the recent ODP assessments of the engineering problems in Hole 504B. The best prospect for significant deepening of Hole 504B seems to involve milling and fishing the junk, setting a liner casing if necessary, and coring/drilling ahead with either the standard RCB or a medium-diameter diamond system on the existing drillstring. Also, it is discussed a possible timing dilemma regarding downhole measurements on the engineering leg. Finally it is presented the new and reassessed thematic justifications for deepening 504B.

JOIDES Number: 355/E Rev.

Date: 10/89

Title: Formation of a Gas Hydrate-its Effect on Pore Fluid
Chemistry, its Modulation of Geophysical Properties, and
Fluid Flow.

Proponents: R. von Huene, E. Suess, K. Kvenvolden and T. Shipley

This proposal presents a drilling program through the base of a gas hydrate at a site where this drilling can be accomplished safely. The objectives are to understand the formation of gas hydrate in the marine environment, to provide a basis for improved geophysical interpretation of its occurrence, and to clarify the grounds on which the safety of ODP continental margin drillsites are judged. Other objectives are: 1) to quantify the tectonic erosion coeval with subduction of the Nasca Ridge and to date the change from erosion to accretion at the margin; 2) to study the apparent landward shift of coastal upwelling since the Miocene and the concurrent shift in a major contour current indicated by the sedimentary structure in Lima basin.

At the Peru continental margin, several conditions allow the lower gas hydrate boundary to be penetrated without undue risk. The proposed sites are in the axis of a syncline where free gas and fluids tend to migrate up-structure. The reflection at the base of the hydrate (BSR) is strong on one flank and fades away in the synclinal axis. The major source of methane gas is probably Quaternary organic-rich sediment. The depth where this layer reaches the transition between hydrate and gas, the BSR is observed. The drilling strategy is to penetrate the poorly developed part of the gas hydrate first and gradually shift drilling to the flank where the BSR is better developed.

JOIDES Number: 221/E Add.

Date: 11/89

Title: Data Supplement to Eastern Equatorial Pacific Neogene
Drilling Proposal

Proponents: N.G. Pisias and A. Mix

The principal objective of the proposed drilling program is to obtain sediment records of the Neogene history of oceanic and atmospheric circulation in the equatorial Pacific. Two drilling transects are proposed crossing the major currents systems of the equatorial Pacific. These transects are located at 110°W and approximately 95°W. Based on the results of site surveys and the

scientific objectives, two drilling plans are presented. An attached data package represents site survey information collected on recent cruise of the R/V Thomas Washington.

JOIDES Number: 317/E Add. Date: 11/89
 Title: Accretionary Sedimentary Wedge Deformation and Fluid
 Expulsion Processes: the Northern Cascadia Subduction Zone
 off Vancouver Island
 Proponents: R.D. Hyndman and E.E. Davis

The purpose of this addendum is, first, to provide an update on site survey work being carried out in the Vancouver Island margin proposal area. Second, in response to the reviews of some of the thematic panels, clarification is provided of the proposed deformation and fluid expulsion model based primarily on geophysical data, along with some geochemical implications. The primary objectives for drilling outlined in the original proposal remain unchanged:

- to obtain the data required to constrain models of sediment fluid expulsion and deformation during the accretion process;
- to provide calibration of shipborne geophysical measurements that provide the main regional constraints on accretion models;
- to estimate the area on the subduction thrust where the brittle rupture of major earthquakes can occur, using borehole fluid pressure and thermal data.

It is proposed to drill six sites. Four of these sites which have modest penetration (c. 500m.) are given highest priority: a basin reference, a coherent deformation site, an incoherent deformation site and a hydrate site. Two additional sites (penetration >1000m.) are listed for a more complete program: a mature prism site and a deformation front thrust site.

JOIDES Number: 358/A Date: 11/89
 Title: Formation of Volcanic Rifted Passive Continental Margins:
 Proposal for a Drilling Transect at the Vøring Margin.
 Proponents: O. Eldholm, J. Skogseid and S.T. Gudlaugsson

During Leg 104, the drilling of a single hole to the basement was the first step towards the understanding of the complex processes and series of events involved in the continental breakup and initial formation of oceanic crust at a volcanic margin. The concept of this proposal is therefore, to drill a transect of six holes, which includes Site 642, to sample a number of features formed during the rift-drift transition.

The overall drilling objective is to obtain a better geological framework to evaluate the genesis and evolution of a volcanic margin, and to provide boundary conditions for modelling the geodynamic processes involved. Specifically, the authors propose to address the following primary objectives: 1) late rift paleoenvironment; 2) emplacement of the dipping sequences; 3) continent-ocean boundary; 4) asymmetric breakup; 5) origin of sub-basement (including seaward dipping) reflections; 6) hotspot volcanism; 7) outer margin subsidence; 8) Cenozoic paleoenvironment; 9) ash stratigraphy; 10) continental uplift.

JOIDES Number: 359/A

Date: 11/89

Title: Conjugate Passive Margin Drilling - North Atlantic Ocean
(Preliminary Synopsis)

Authors: B.E. Tucholke and al.

It is proposed a drilling program that will systematically investigate the initiation and development of full rift systems in the North Atlantic. This requires study of both sides of the rift, i.e. conjugate margins. It will be studied two transect zones which approximate end members in terms of rift symmetry. One transect, Flemish Cap-Goban Spur, has generally symmetrical crustal structure and is bounded by ocean crust dating about Santonian. The second transect, northern Newfoundland Basin - Galicia Bank, is strongly asymmetrical, and its rift-to drift transition dates to Aptian time; in contrast to the relatively thick continental crust of Galicia Bank, the conjugate northern Newfoundland Basin contains what is interpreted to be highly extended and thinned continental crust.

JOIDES Number: 360/D

Date: 12/89

Title: Back-Arc Hydrothermal Activity and Metallogensis at the
Valu Fa Ridge (Southern Lau basin, SW Pacific)

Authors: U. von Stackelberg, J. Erzinger, Y. Fouquet, P. Herzig, J. Morton and S. Scott

The study of metallogensis processes in back-arc environments such as the Lau Basin is a fundamentally different approach to the investigation of EPR-type (sediment-starved) and Guyamas Basin-type (sedimented) oceanic ridges. This approach is not only complementary to the investigation of seafloor spreading centers, but it also corresponds more closely to major massive sulfide deposits on land. The Valu Fa Ridge is one of the few places known at the modern seafloor where an active back-arc hydrothermal system can be studied in statu nascendi. The main objective of this proposal is a better understanding of the complex interaction between tectonic, magmatic, hydrothermal and geochemical processes at active spreading centers in marginal basins. This includes the study of the fluid geochemistry, fluid flow paths, the processes of deposition of hydrothermal oxides, sulfates and sulfides (especially massive sulfides), as well as the alteration of andesitic rocks in an active island-arc influenced back-arc spreading center. Drilling in the Lau Basin offers the rare opportunity to examine an important type of ore forming hydrothermal system at the modern seafloor. This has substantial implications on the understanding of ancient back-arc sulfide mineralization. A key issue of our Valu Fa Ridge drilling proposal is to increase our current knowledge of the relation between metallogenic processes which are responsible for the formation of a world-wide important class of ore deposits and the generation of new oceanic crust. This was addressed as a global scientific goal of ODP by the COSOD II Conference (1987) and the White Papers of the JOIDES Lithosphere, Sedimentary and Geochemical Processes Panels.

It is proposed to drill two bare-rock basement holes (about 200m penetration): LG4B on the most elevated part of central Valu Fa Ridge (1600 m water depth) in the vicinity of a recently discovered smoker field with 340°C hot vents, and LG4C on the Southern Valu Fa Ridge (1800 m water depth) in an extended area of low-temperature (40°C) hydrothermal discharge.

JOIDES Number: 361/A

Date: 1/90

Title: A Proposal for Drilling an Active Hydrothermal System on a Slow-Spreading Ridge: Mid-Atlantic Ridge, 26°N (TAG Area)

Authors: G. Thompson, S.E. Humphris, K. Gillis, M. Tivey, H. Schouten, M. Kleinrock, M. Tivey, P.A. Rona, J.R. Cann

The overall objective of this proposal is to characterize the subsurface nature of an active hydrothermal site on a low-spreading ridge. A suggested drilling strategy to achieve this goal would include: a) the nature and the distribution of deposits in the near surface of the hydrothermal system; b) the nature and the distribution of deposits in stockwork and root zone below the surface deposits; c) the nature and the characteristics of the down-welling zone in a hydrothermal cell; d) the location and the nature of the reaction zone (boundary between heat source and circulating fluid).

A prime site for drilling should be a large, mature deposit. Mature (1,000 years +) so that the underlying crust and root zone is well altered and cemented; this ensures good penetration and recovery and no major rubble problems. Large (200m +) ensures it covers a large zone and the drill penetrates the root zone, and covers a wide range of deposits, temperatures, etc. The TAG field located on the Mid-Atlantic Ridge at 26°N meet these requirements, and has the added advantages of showing zone refinement and a full range of temperature deposits. It is proposed to drill 2 or 3 shallow (100-300m) holes, 2 holes about 500-600m, and a deep hole (1.5-2 km).

JOIDES Number: 362/E Rev.

Date: 1/90

Title: Proposal for Scientific Ocean Drilling, Chile Margin Triple Junction, Southern Chile Trench.

Authors: S.C. Cande, S.D. Lewis, G.K. Westbrook

The drilling objectives for the southern Chile margin are focused on the effects of ridge crest subduction. The geophysical studies suggest that the major effect of the collision is that the margin goes through a period of gradually accelerating tectonic erosion before the ridge crest arrives at the trench, culminating in a period of rapid tectonic erosion when the ridge passes beneath the forearc, followed by a period of rebuilding. The basic objectives of the drilling program are to 1) test the model of what might be called "accelerated subduction erosion" and to 2) explore the mechanisms responsible for the subduction erosion.

The basic strategy that serves as foundation of the proposed Chile margin drilling is: 1) to determine the time-space distribution of materials in the forearc to constrain geometries and kinematics of the materials, and 2) in situ measurement of physical, chemical, and geological parameters to provide information about the processes operating in the forearc.

It is proposed to drill a total of 16 sites grouped as follows: 1) an east-west transect of the pre-collision zone; 2) an east-west transect of the collision zone; 3) a north-south transect of the collision zone; 4) the Taito Ridge; 5) a north-south transect of the post-collision zone; 6) an east-west transect of the post-collision.

JOIDES Number: 363/A

Date: 1/90

Title: Plume Volcanism during the late Rift to Early Drift Phase of
Grand Banks - Iberia Separation

Authors: B.E. Tucholke, J.A. Austin, L.F. Jansa, A.S. Edwards

The Southeast Newfoundland Ridge and its associated crustal elements represent a microcosm of a volcanic passive margin, which apparently originated in response to interaction between a mantle plume and the southern part of the late-stage Grand Banks - Iberian rift zone. Proposed drilling in this area will address fundamental questions about the nature and role of hot-spot volcanism in and adjacent to continental-rift settings, the origin and age/depth history of volcanic plateaus containing seaward-dipping reflectors and of (?) volcanic ridges at a presumed continent-ocean boundary, the dynamics and geochemical characteristics of rift systems, plate kinematics of the North Atlantic, and the origin of high-amplitude magnetic anomalies. The proposed drillsites are located to optimize basement targets; they consequently will contribute generally, but not optimally, to our understanding of paleoceanography and sedimentary /geochemical processes in the North Atlantic.

It is proposed to drill 5 sites.

JOIDES Number: 364/A

Date: 1/90

Title: Thrust Units of Continental Basement in a Collisional
Setting: the Sardinian-African Strait in Central
Mediterranean

Authors: R. Sartori, L. Torelli, N. Zitellini, P. Tricart, G.
Brancolini, R. Catalano, B. D'Argenio, R. Compagnoni

The spectrum of convergent margins explored or to be explored (Barbados) or to be explored in the near future (Nankai, Cascadia) shall hopefully provide a good data set for deformations occurring in modern accretionary prisms. However, all these targets, as almost all the targets on convergent plate margins where subduction of oceanic lithosphere is occurring, address only to deformations happening in the non-metamorphosed, plastic sedimentary sequences covering the subduction system.

The authors propose to drill one deep hole in a collisional setting between Sardinia Island and the African coast of Tunisia, where crystalline-metamorphic units of different nature and paleogeographic pertinence are thrust onto each other and/or are sheared by strike-slip faults at quite shallow crustal levels.

The expected results include determination of: 1) nature of seismic reflectors bounding the different units; b) nature, amount and pressure of fluids occurring in the thrust/shear zone and physical parameters in fault rocks of the continental basement as in situ stress determination.

JOIDES Number: 330/A Add.

Date: 1/90

Title: Mediterranean Ridge: an Accretionary Prism in a Collisional
Context

Authors: M.B. Cita, A. Camerlenghi, L. Mirabile, G. Pellis, B. Della
Vedova, W. Hieke, S. Nuti, R. Ramella

The objectives of this drilling program are to study: a) deformation at convergent plate boundaries in a collisional context; b) interactions of the presence of a salt layer at shallow depth in the sediment sequence; c) mud diapirism.

Nothing is changed in the general scheme and in the individual drillsites. However, this addendum adds new arguments to the proposal 330/A on the basis of: a) new results from a cruise planned to provide information pertinent to the proposed drilling program; b) Tectonic Panel White Paper ; c) evaluation of the proposal by the thematic panels.

JOIDES Number: 365/A

Date: 1/90

Title: Conjugate Passive Margin Drilling - North Atlantic Ocean

Authors: J. Austin, A. Grant, F. Gradstein, L. Jansa, C. Keen, K.E. Loudon, P.R. Miles, M. Salisbury, J.C. Sibuet, S.P. Srivastava, B.E. Tucholke, and R.B. Whitmarsh

The authors propose a drilling program that systematically investigates the initiation and the development of full rift systems in the North Atlantic. This requires study of both sides of the rift, i.e. conjugate margins. It is proposed study of two transect zones which approximate ends members in terms of rift symmetry. One transect, Flemish Cap - Goban Spur, has generally symmetrical structure across the rift zone and asymmetrical beyond. It is bounded by ocean crust dating to about late Albian (110Ma). The second transect, northern Newfoundland - Iberia abyssal plain/Galicia Bank, is symmetrical in the south and highly asymmetrical in the north. Its rift-to-drift transition dates to Aptian time (anomaly M0, 118Ma). In contrast to the relatively thick continental crust of Galicia Bank, the conjugate sections of northern Newfoundland basin and Iberia abyssal plain are highly extended and thinned crusts.

For study of passive-margin rift systems, these particular transects have several advantages: 1) they are characteristic of the spectrum of non-volcanic passive margins; 2) basement and intrabasement targets are accessible to the drill because of limited overburden, 3) they are geophysically well documented, 4) half of each transect already has significant drilling data available, and 5) the areas are logistically convenient for future work that could complement a drilling program.

The proposed sites will also serve purposes other than simply understanding passive margin evolution. For example, the Newfoundland basin and the Iberia abyssal plain sites located on highly extended crusts will sample thick and relatively complete sedimentary sections in the western and eastern margin "gateways" areas between the northern and central Atlantic; it will be thus very valuable in understanding the history of northern-source bottom water circulation in the Atlantic Ocean.

JOIDES Number: 366/A

Date: 1/90

Title: Labrador-Greenland (Preliminary Proposal)

Author: M.H. Salisbury

This preliminary proposal is to apprise JOIDES advisory scientific structure of the oncoming Canadian survey plans in the Labrador-Greenland. The cumulative objective of these surveys is to image basin and basement structures under the conjugate margins of the Labrador Sea and selected

portions of the Labrador Sea basin in order to study the tectonics, timing and sedimentary and erosional consequences of rifting. Ultimately, it is hoped to image a complete pull-apart system and to be able to fit the basin back together.

It is intended to submit a drilling proposal next fall 1990.

JOIDES Number: 367/C

Date: 2/90

Title: Sedimentation History of a Cool Water Carbonate Continental Margin

Author: N.P. James

Carbonate platforms constructed by sediments formed in subtropical, cool waters are poorly known and have rarely been drilled in the modern ocean. The Eucla Shelf, in the Great Australian Bight, is the largest shelf in the globe composed entirely of cool water carbonate sediments. The Cenozoic-modern part of this shelf, called the Eucla Platform, contains a complete history of sedimentation during the Cenozoic. Understanding such structures is fundamental to actualistic modelling of older phanerozoic platforms, unravelling the global history of Cenozoic/Quaternary sea level and understanding the interaction of oceanography and carbonate deposition.

The Eucla Platform is the carbonate cap to the rifted continental margin of southern Australia, deposited atop a thick Mesozoic sequence of clastic sediments following initial rifting of Antarctica and Australia during the Jurassic. The platform comprises an onshore portion beneath the Nullarbor Plain, an offshore portion forming the continental shelf and several deep water (400 to 1000m) terraces seaward of the shelf break. The steep, ? erosional, continental slope is fronted by a continental rise blanketed with carbonate sediments. The onshore exposures of Eocene-Miocene carbonates display an excellent, but unconformity-broken record of sedimentation in cool and warm-water settings. Several oil wells and numerous seismic surveys on the shelf have provided a framework of stratigraphy. Rocks and sediments dredged from the rise and submarine canyons incised into terraces suggest a complete record of Tertiary and Quaternary sedimentation.

A series of 3 drill sites are proposed: a shallow water (ca 250m) hole to sample the shelf margin sequence in a zone of large prograding clinoforms where stratigraphy can be tied to the onshore succession; a site on either the Eyre or Ceduna Terrace in intermediate water depth (ca 700m) to document "deep shelf" carbonate sedimentation, below the zone affected by major sea level fluctuations, thus allowing a tie between bathyal and shelf sequences; a final hole sited on the continental, in depths of ca 4000m, to permit correlation between existing ODP holes (281, 282, 264) on the abyssal plain and the shelf.

JOIDES Number: 368/E

Date: 2/90

Title: Jurassic Pacific Crust: a Return to Hole 801C

Authors: R.L. Larson, P.R. Castillo, P.A. Floyd, A. Fisher, R.D. Jarrard, and R.A. Stephen

The authors propose to characterize the petrology, hydrogeology, structure, and physical properties of the world's oldest oceanic crust created at a fast spreading rate in a type-locality situation. Middle Jurassic-aged sediments and oceanic crust were recovered from beneath the deep western Pacific Ocean at Site 801 on Leg 129 of the Ocean Drilling Program. Extrusive lava flows and

pillow basalts underlie sediments deposited near the boundary of the Callovian/Bathonian Stages (170 m.y.) in the 5700m-deep Pigafetta basin. A total of 131 m. of ocean crustal section was penetrated in Holes 801B and 801C, with 20 m. of overlap between the two holes. The majority of the basement section was recovered from Hole 801C following installation of a reentry cone, and casing emplacement through the entire sediment section. No logging or other downhole geophysical experiments were conducted in basement during Leg 129, but the existing hole is stable and clean. Thus, we propose to deepen this hole to a total of 1000 m. in the crustal section that should penetrate the entire extrusive volcanic sequence and down in sheeted dikes. It is then proposed to conduct a comprehensive program of logging and downhole measurements that includes packer measurements and an oblique seismic experiment. The entire program will require 56 days, or approximately one leg of drillship time.

If this proposed program is successful, the seismic Layer2/Layer3 boundary could be reached with an additional 500 m. of penetration. This would require 7600 m. (25,000 ft) of total drillstring, and is possible with currently existing rotary drilling technology.

JOIDES Number: 369/A

Date: 2/90

Title: A Deep Mantle Section in the Mark Area: a Preliminary
Proposal for the Ocean Drilling Program

Authors: C. Mevel, and M. Cannat

In order to build models of oceanic spreading, it is needed data on magmatic processes (partial melting and magma extraction) and on the deformational characteristics (deviatoric stress, viscosity, 3D geometry of plastic flow) of the oceanic mantle below the ridge. The present information on these processes comes largely from the study of basalts, gabbros, and peridotites sampled in the oceans by submersibles and by dredges.

A deep hole in the upper mantle at an active ridge would, in contrast with dredging and submersible studies, provide a relatively continuous vertical recovery and allow for good assessment of the nature of the lithological contacts, and of the chronology (cross-cutting relationships) of the various sets of structures.

The authors propose to drill a deep hole in the MARK area (Mid-Atlantic Ridge /Kane fracture zone), which is certainly the most extensively studied portion of the Mid-Atlantic Ridge. The site is located on a peridotite outcrop discovered with the Alvin and extensively explored with the Nautilie.

JOIDES Number: 370/A

Date: 2/90

Title: Magmatic Processes and Natural Tracers - Deep Crustal
Drilling Leg

Authors: H.J.B. Dick, and P.T. Robinson

Layer 3 in the oceanic crust is the most poorly understood of all crustal components. This reflects not only the lack of samples but the fundamental difficulty in studying magmatic cycles in plutonic rock due to the complexity of magma chamber and post-cumulus processes. It is proposed to study magmatic processes in the oceanic crust in a region where the isotopic and trace element input of magma to the crust is highly variable, using this

variability as a natural tracer to study and constrain magmatic processes in the oceanic crust.

The main objectives of this proposal are of: 1) test the isotopic and trace element variability of magmas entering the lower crust for comparison to those forming layer 3 to determine if extensive crustal magma-mixing is occurring to eliminate source heterogeneities in North Atlantic plume related ridge basalts; 2) drill a thick plutonic sequence in a region where isotopic and trace element character of the lower crust reflect variations in the local mantle source in order to use these variations to investigate magmatic processes in layer 3 ; 3) characterize layer 3 at slow spreading ridges near hot spots to examine the potential effect of enhanced magma supply at slow spreading ridges.

The authors propose to drill approximately 1500 m. into an exposed plutonic sequence at a single site near the Azores mantle plume. At the present time, the most likely site is the transverse ridge comprising the south wall of the Oceanographer Fracture Zone.

JOIDES Number: 371/E

Date: 2/90

Title: To Drill the Nova-Canton Trough

Authors: K. Becker, G. Brass, P. Castillo, B.R. Rosendahl

This is a preliminary proposal to drill the Nova-Canton Trough. This trough is a 500 km long gash in the equatorial Central Pacific Ocean and its origin is still unresolved. Although this unknown origin is interesting, the real attractiveness for drilling is that this trough offers a window into the oceanic crust. The general picture that emerges from the existing geophysical data is that of a central graben bounded by normal faults, along which magmas have locally leaked out. Apparently, at least several kilometers of normal oceanic crust are exposed along the margins of the trough, at least where the flanking ridges are absent.

JOIDES Number: 372/A

Date: 2/90

Title: Cenozoic Evolution of Intermediate Water Circulation and of Vertical Chemical Gradients in the North Atlantic

Author: R. Zahn

New records of nutrient-related proxies $\delta^{13}\text{C}$ and Cd/Ca measured on benthic foraminera from intermediate-depth core sites suggest that mid-depth concentrations of CO_2 and dissolved nutrients were lower at the Last Glacial Maximum (approximately 18,000 years B.P.) than today. At the same time, concentrations of CO_2 and nutrients in the deep water were higher than today. That is, the vertical chemical structure of the ocean has changed on a glacial-interglacial time scale suggesting that CO_2 has been shifted between intermediate-depths and deep-ocean water masses. If external alkalinity sources remained reasonable stable, re-adjustments of the ocean's internal alkalinity cycle would have lowered the oceanic CO_2 partial pressure and fostered the transfer of CO_2 from the atmosphere to the oceans. These changes are likely to play an important role in defining the state of global climate. Long time series of benthic foramineral $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ from North Atlantic DSDP Sites 552 (2.3 km water depth) and 607 (3.4 km water depth) provide provisional evidence for a mid-Pleistocene shift towards enhanced vertical

chemical gradients in the upper deep waters of the North Atlantic and lower frequencies of climatic variability. However, the spatial coverage and stratigraphic range of paleoceanographic proxy data available from mid-depth core sites is far too small to determine the mechanism which exerts primary control on the variability through time and the amplitude of the ocean's vertical asymmetry.

The author proposes here to obtain HPC cores from the Rockall Plateau and the upper Moroccan continental slope at water depths of 1100-1200 m. The drilling targets are critical to separating the long-term effects of convection in the open North Atlantic *versus* the advection of Mediterranean waters on the chemical domain of the mid-depth North Atlantic. Long term series of benthic $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ from these sites will be compared to similar records from the deeper North Atlantic DSDP sites 552 and 607 so as to assess the variability of vertical chemical gradients in the ocean through time and their relation to global climatic change.

JOIDES Number: 373/E

Date: 3/90

Title: Revisiting Site 505: State of Stress, Hydrologic Circulation
and Heat Flow

Authors: M.D. Zoback, D. Castillo, K. Becker

This a proposal to drill a hole ~ 1km into basement in 3.9 m.y.-old crust at DSDP site 505, approximately 80 km north of hole 504B. This experiment would address three sets of objectives. First, the proposed study would make important new data available on 1) the state of stress in young oceanic crust, 2) the nature of ridge flank hydrothermal processes and 3) the composition and physical properties of crust subjected to hydrothermal alteration where conductive heat flow (as measured at sea floor) is less than half that at site 504B. The low conductive heat flow at site 505 is apparently the result of appreciable convective heat flow transfer. By comparison with data already available from site 504B, the data we propose to obtain would make possible to address such fundamental questions as the origin of compressive intraplate earthquakes in young ocean crust, the hydrologic and thermal properties of convecting ocean crust and the physical and the chemical mechanisms responsible for the transition from convective to conductive heat flow near ridges. A second set of objectives of drilling at the 505 site is to provide a comprehensive lithostratigraphic and petrophysical comparison with site 504B. This comparison would make it possible to better understand the influences of temperature, fluid circulation and state of stress on physical properties and the degree and nature of chemical alteration as a function of age/distance from the rift axis. Finally, the authors have been advised that the 505 site is a excellent place for use of the HPC to obtain a high-resolution chronologic, climatic and atmospheric CO_2 record for the Plio-Pleistocene using carbonate and siliceous microfossils. This third set of objectives is not discussed in the proposal.

JOIDES Number: 374/A

Date: 3/90

Title: Mantle Heterogeneity Deep Hole at the Ocenographer
Fracture Zone

Authors: H.J.B. Dick, J. Quick

This proposal is for a mantle deep hole on the crest of the north wall of the Oceanographer Fracture Zone where the DSRV Alvin found a continuous exposure of serpentinite and altered peridotite from the base to the crest of the wall. The area is of particular interest given that it lies in an area of isotopic enrichment on the side of the Azores swell.

The principal objectives include: 1) Determine whether or not a variety of different primary melts reflecting fractional melting of an isotopically and trace element heterogeneous source have passed through the shallow mantle on their way to mixing in a shallow magma chamber; 2) Determine the shallow mantle stratigraphy, specially the location, position and abundance of features and lithologies related to the late stage melt migration, for example podiform dunites; 3) Determine the nature and orientation of the petrofabrics reflecting the shallow mantle creep history and emplacement of the mantle to the base of the crust.

JOIDES Number: 375/E

Date: 3/90

Title: Deep Crustal Drilling in Fast-Spreading Crust at the Hess Deep
 Authors: H.J.B. Dick, K. Gillis, P. Lonsdale

Recently a major new strategy for studying the deep ocean crust and shallow mantle was proposed to the drilling community by the JOI/USSAC Workshop on Drilling the Oceanic Lower Crust and mantle. Given the numerous and varied tectonic exposures of lower crustal and upper mantle rocks in the world oceans, it is proposed that these exposures be used to drill composite sections of the ocean crust in different tectonic environments by drilling a series of strategically chosen offset drill holes. This strategy has the particular advantage that it can give a three dimensional view of the ocean crust, by multiple penetrations of the same boundary or horizon, which cannot be obtained by single total penetration drill holes. Thus the Moho could be drilled repeatedly at a single location along a series of offset drill holes where it is tectonically exposed, such that a representative sampling of this horizon could be obtained in three dimensions.

This proposal is to drill a series of offset drill holes in the lower crust exposed on the walls of the Hess Deep in the Western Pacific, where old ocean crust has been uplifted to form steep walls where is being penetrated by a propagating rift axis. Recent submersible dives by the French in the Hess Deep have located a number of suitable locations for such a drilling, and a follow up American dive program will occur this spring which will presumably locate more potential drilling sites.

JOIDES Number: 376/A

Date: 3/90

Title: Drilling the Layer 2-Layer 3 Boundary (and the Crust Mantle Boundary) on the Southern Wall of the Vema Fracture Zone.

Authors: J.M. Auzende, Y. Lagabrielle, E. Bonatti, M. Cannat, T. Juteau, V. Mamaloukas-Frangoulis, C. Mével, H.D. Needham

Drilling the dyke complex-gabbro transition and the crust-mantle boundary in typical sections of complete oceanic crust is an important goal of the Ocean Drilling Program. Petrological, geochemical and structural data obtained from samples recovered along such transition zones would allow considerable

increase in our understanding of oceanic lithosphere spreading and related deep hydrothermalism processes.

Among the main results of the french submersible dives surveying the southern wall of the Vema Fracture Zone in 1988 was the observation of a 2500m thick section of oceanic crust including from bottom to top: serpentized peridotites, gabbros, sheeted dykes and basalts. Local observations clearly show that the dykes are rooted within the gabbros. Results of the dives indicate that each level of the oceanic crust is exposed along the fracture wall. Thus each transition between the different levels of the oceanic crust can be reached by drilling about 1000m holes.

Two sites are proposed. The first one should start in the dykes and would permit to reach the layer 2-layer 3 transition zone. The second one, starting in the gabbros may allow to reach the crust-mantle boundary.

JOIDES Number: 377/F Rev.

Date: 3/90

Title: A Global Network of Permanent Ocean Floor Broad Band Seismometers: a Test Site Northeast of Oahu, Hawaiian Islands.

Authors: G.M. Purdy, A.M. Dziewonski

The long-term goal (5-10 years) goal is to establish a global network of 15-20 permanent seismic observatories in the deep ocean. The scientific justification for this is strong and diverse: such a network would revolutionize studies of global earth structure, upper mantle dynamics and lithosphere evolution, earthquake source mechanisms, oceanic crustal structure, tsunami warning and monitoring and deep ocean noise sources and propagation mechanisms. Before such an ambitious goal can be realized many experimental and technical issues must be resolved. This requires a series of pilot experiments to make noise measurements, record data from teleseismic events for comparison with existing nearby island stations, and test new broad-band sensors and other long term deployment instrumentation. We propose to establish a test site at which the first of these pilot experiments can be carried out. An excellent location for these experiments is ~300 km northeast of Oahu, Hawaiian Islands. It is required a hole with 50-100m penetration into oceanic basement that is clean and stable, and is equipped with a reentry cone. High quality logging and VSP would be important components of the drilling program. All the required pilot experiments would be carried out by wireline reentry from a conventional research vessel during the next 2-3 years.

JOIDES Number: 378/A Rev.

Date: 3/90

Title: Growth Mechanics and Fluids Evolution of the Barbados Accretionary Wedge

Authors: R.C. Speed, G.K. Westbrook, J.C. Moore, A. Mascle, X. Le Pichon, S. Dreiss, D. Karig, M. Langseth

This revised version of proposal 342/A addresses fundamental issues of the mechanics of growth of accretionary wedges and their fluid-flow regimes, in a situation where major variables such as the thickness and type of sediment on the ocean floor have large variations, but others such as the direction, rate of subduction, and history of the convergent margin are common.

There are important aspects of the mechanics of growth of accretionary wedges that have not been studied before by the Ocean Drilling Program, and nor at the time of writing, are there other proposals that address them. Specifically, these are (i) the determination of the rate of advance of the wedge, as distinct from the rate of convergence of the plates, (ii) the development of thrusts with large displacements (several kilometers or more), (iii) the history of accretion and deformation of the wedge and its overlying cover of slope sediments (episodic growth), (iv) the tectonic and sedimentary interaction between the accretionary wedge and its forearc basin.

Of the two ODP Legs, 110 and 112, that have to date been the most successful in studying the fluid regime of forearc region, Leg 110 showed evidence for partitioning of the fluid flow regimes above and below the decollement, transient flow, and horizontal flow several km in advance of the wedge. The proposal is to make improved and better controlled observations on the sources and flowpaths of fluids (including lateral flow, out of section) in the known area of activity proven by drilling, in a predominantly pelagic sedimentary section and extend these observations to the southern area where observations from seismic, heatflow, sidescan sonar, and porefluid chemistry in piston core show that there is active fluid flow in accreted sediments from a submarine fan.

JOIDES Number: 379/A

Date: 3/90

Title: Scientific Drilling in the Mediterranean Sea: New Prospects

Author: J. Mascle

Since 1986 and COSOD II conference, many reports from various ODP structures have strongly recommended to look both towards global perspectives and new frontier experiments. In this challenge, the author believes that the Mediterranean Sea can play its part because it represents the only area in the world where two large continents are progressively entering collision, therefore the Mediterranean is the only area where processes at colliding continental plate boundaries can really be studied.

The triple goals of this preliminary proposal are: 1) to propose global scientific targets that can be addressed using new development in drilling technology (deep hole); 2) to combine if possible deep drilling with "in situ" (logging) and possibly nearby geophysical experiments; 3) to preserve further use of holes for future potential in situ experiments that may be organized using other platforms.

A deep hole (1.5 km) is proposed into the peridotite in the Vasilov basin. The second hole is targeted to explore collision related mechanisms on the crest axis of the Mediterranean Ridge where evaporites are absent and where it is expected the maximum of stress.

JOIDES Number: 380/A Rev.

Date: 3/90

Title: Drilling into the Clastic Apron of Gran Canaria: Evolution of a Linked System Volcanic Ocean Island-Sedimentary Basin

Proponents: H.-U. Schmincke, U. Bednarz, S. Cloetingh, A. Freundt, P.v.d. Bogaard, M. Menzies, W. Weigel and G. Wissmann

This proposal is a revised version of proposal 349/A that presents a drilling program of five holes into the volcanic oceanic island of Gran Canaria (Canary Islands). The drilling targets are the ultimate aim of the interdisciplinary

research project **VICAP = Volcanic Island Clastic Apron Project**. The purpose of this project is to study the physical and chemical evolution of a confined system "asthenosphere - lithosphere - seamount - volcanic island - sedimentary basin" by drilling into the proximal, medial and distal facies of a volcanic apron, which formed by submarine volcanic activity during the early seamount stage, explosive volcanic activity in shallow water and on land, lava flows and pyroclastic flows entering the sea, and erosional activity. The clastic apron is expected to contain material from throughout the entire evolution of the volcanic complex, including material no longer present on the island and - most importantly - material from the unexposed and unaccessible submarine stage. A major element of the program will be high precision single-crystal age dating with the aim of monitoring the island and basin evolution in time slices as detailed as 100.000 years.

JOIDES Number: 381/A

Date: 3/90

Title: Scientific Objectives for Drilling on the Continental Shelf
and Slope of Argentina

Author: B.T. Huber

This is a preliminary proposal for deep-sea drilling of the continental shelf and slope of Argentina, between 35°S and 55°S latitude to recover an extensive record of passive margin sedimentation spanning from the Early Cretaceous opening of the South Atlantic Ocean to present. This is intended to complement the Hinz, Stein, et al. (May 1989) proposal referenced as 327/A for drilling on the Argentine continental rise.

The major objectives of this proposal are to study: 1) Relative sea level changes on a passive margin; 2) Changes induced by the Early Cretaceous opening of the South Atlantic Ocean; 3) Global paleoclimatic changes; 4) Late Mesozoic-Cenozoic Southern Hemisphere magnetobiochronology; 5) Former presence of trans-South American seaways.

JOIDES Number: 382/A

Date: 5/90

Title: A Proposal for Drilling into Upper Mantle-Lower Crustal
Uplifted Section at the Vema F.Z. in the Atlantic.

Author: E. Bonatti

Two major objectives can be addressed with a drilling program in the Vema F.Z. area, equatorial Atlantic. One objective is to core a thick vertical section of upper mantle and lower crust. This objective can be achieved by drilling into a relatively undisturbed upper lithospheric section (including a mantle peridotite unit, lower crustal gabbros, a dyke complex and pillow basalts) discovered by the submersible *Nautile* on the northern slope of the Vema transverse ridge. The second objective is to understand vertical motions of lithospheric blocks associated with slow-slipping transforms. This objective can be achieved by drilling through a reef limestone capping the summit of the Vema transverse ridge. The two objectives are conceptually related: understanding vertical motions would help interpret the mechanisms which have uplifted and exposed the lithospheric section.

JOIDES Number: 383/A

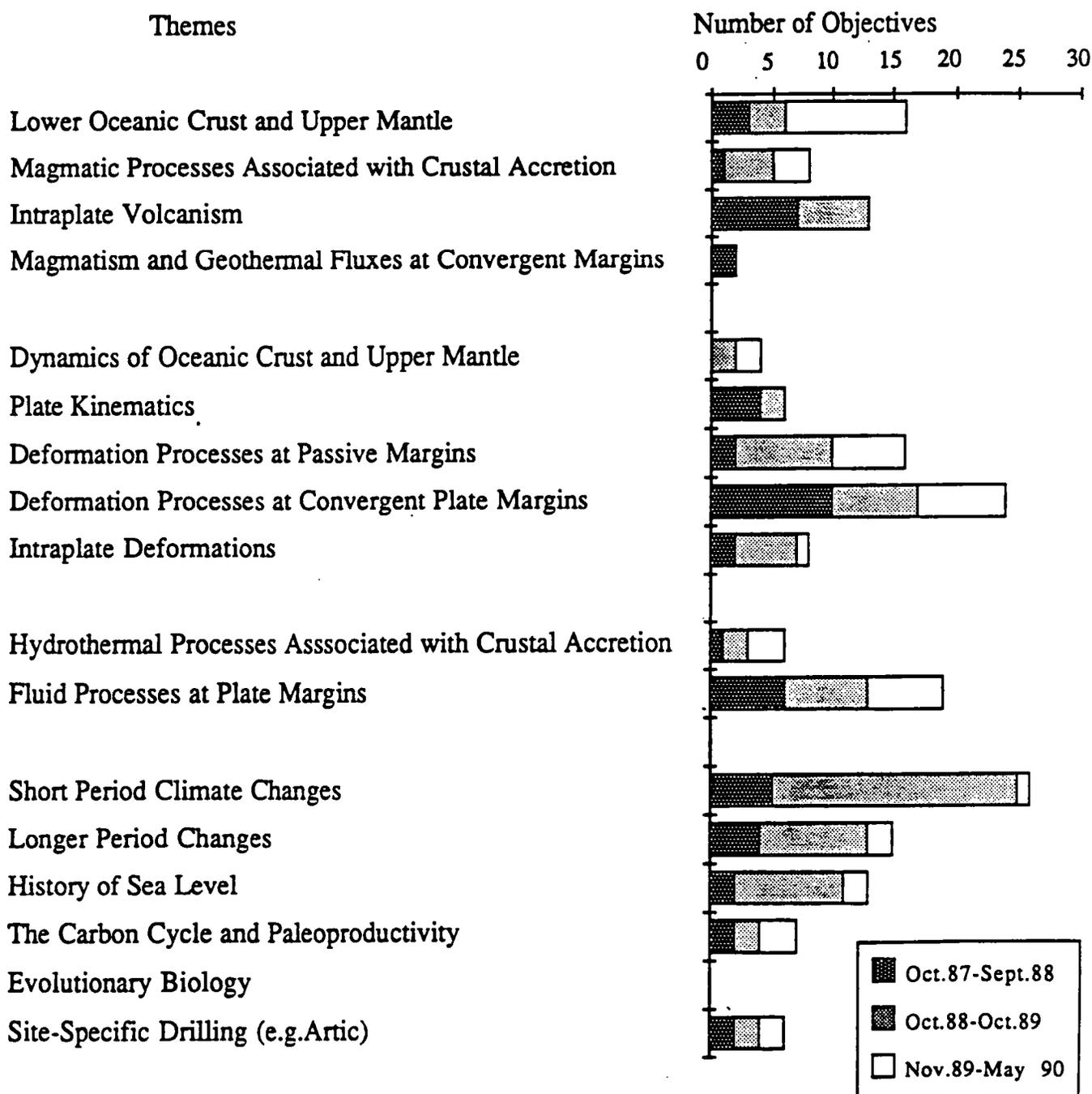
Date: 5/90

Title: A Case Study of Extension within a Continent-Continent
Collision: Preliminary Proposal for ODP Drilling in the
Aegean Sea.

Authors: K.A. Kastens, M.L. Myriamthis, G. Anastasakis

The Aegean Basin is a pocket of extensional tectonism within the overriding plate of a convergent plate margin which is on the threshold of a continent-continent collision. The authors believe that Aegean-style back-arc extension may be a common and even necessary feature of incipient continent-continent collisions, serving to consume oceanic remnants within embayments of the colliding continents. If this is the case, an understanding of the fundamental earth process of orogeny requires an understanding of these early -formed extensional basins. What triggers the onset of extension? What is the causal relationship between extension in the backarc and compression in the forearc? Is continental stretching in a back-arc setting dominated by pure or simple shear or a combination? How is the transition from amagmatic stretching of continental crust to magma-dominated seafloor spreading accomplished? The Aegean Basin is a particularly promising field area to attract these questions because active processes can be compared with the geological record; because the strengths of both land-based and seagoing techniques can be brought to bear; and because the stratigraphy control is superb. We offer three potential drilling strategies for understanding the history of opening of this basin: (1) a series of relatively shallow holes on tilted faults blocks to understand the timing and rates of subsidence and tilting, (2) a deep hole to penetrate a proposed detachment fault, and (3) a hole to sample early volcanic intrusions. The existing data set is sufficient to pose the problems and to extrapolate drilling results into a regional; however additional multichannel seismic and heatflow data will be needed to finalize a drilling strategy, to select specific sites, and to satisfy safety panel considerations.

OBJECTIVES OF RECENT PROPOSALS
 (October 1987 to May 1990)
 IN RELATION TO THEMES IN THE LONG RANGE PLAN

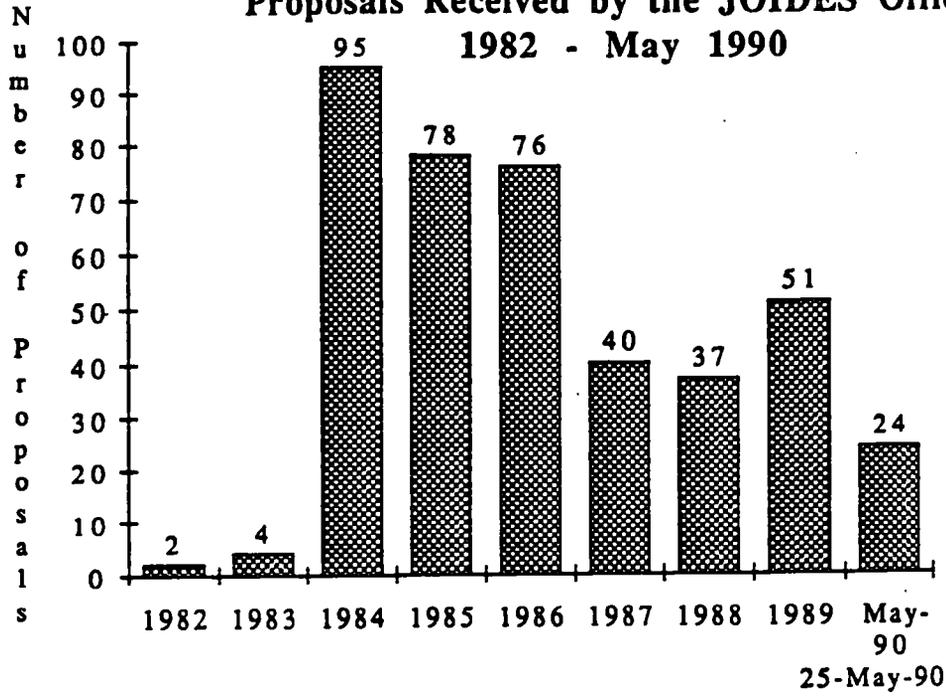


- 118 proposals have been received by the JOIDES Office from 1st October 1987 to 24 May 1990.

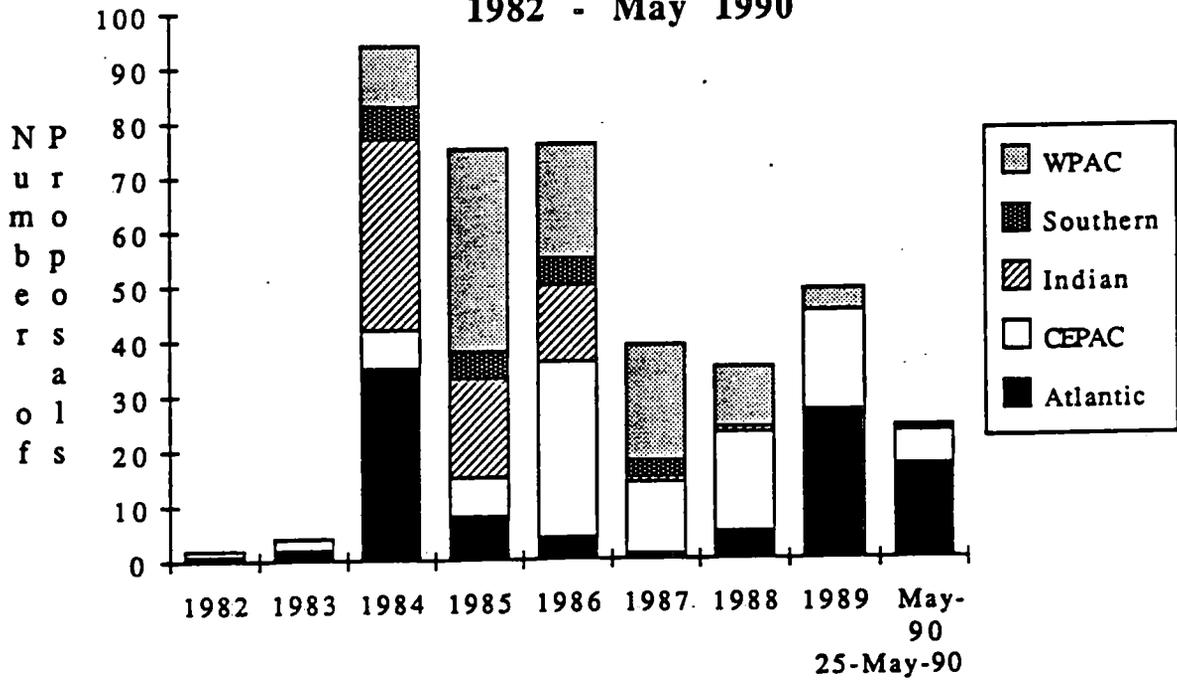
- A proposal can address more than one objective.

24 May 1990

**Proposals Received by the JOIDES Office
1982 - May 1990**



**Proposals vs Years and Oceans
1982 - May 1990**



LISTING OF PROPOSALS

Revised: 5/24/90

A: Atlantic; B: Indian; C: Southern; D: Western Pacific; E: Central and Eastern Pacific; F: Instrumental

JOIDES No	Title	Proponents	Country	Date
71	[idea proposal]	-	-	-
1/A	Pre-m. Cretac. history of SE Gulf of Mexico	Phair & al.	US	12/82
2/E	Middle America trench and Costa Rica margin	Crowe & al.	US	12/82
4/E	Tuamotu Archipelago (French Polynesia)	Okal & al.	US	6/83
5/A	Struc. & sedim. carbonate platforms	Mullins & al.	US	7/83
7/A	Gulf of Mexico & Yucatan	Buffler & al.	US	8/83
8/E	Southern Chile trench	Cande	US	9/83
9/A	Pre-Messinian hist. of the Mediterranean	Hsu & al.	ESF	1/84
11/A	Porto & Virgo seamounts, Iberian margin	Kidd & al.	UK/FR	1/84
12/A	Tyrrhenian back-arc basin transect	Cita & al.	ESF	1/84
13/F	Water column research lab	Wiebe	US	1/84
14/E	Zero age drilling: EPR 13°N	Bougault	FR	1/84
15/A	Formation of the Atlantic Ocean	Herbin	FR	1/84
16/A	Atlantic-Mediterranean relationship	Faugeres	FR	1/84
17/A	Gorringe Bank, deep crust & mantle	Mevel	FR	1/84
19/A	Eleuthera fan, Bahamas	Ravenne & al.	FR	1/84
20/A	Subduction collision: Outher Hellenic Arc	J.Masclé	FR	1/84
22/A	Rhone deep sea fan	Bellaiche & al.	FR	1/84
23/A	Carribbean basins	A.Masclé & al.	FR	1/84
24/A	Barbados transects	A.Masclé & al.	FR	1/84
25/D	New Hebrides arc	ORSTOM team	FR	1/84
28/D	South China Sea	Letouzey & al.	FR	1/84
29/D	Ryukyu Island & Okinawa backarc basin	Letouzey	FR	1/84
31/B	Red Sea, paleoenvironmental history	Guennoc	FR	1/84
32/A	Yucatan basin	Rosencrantz & al.	US	1/84
33/A	Mediterranean drilling [same as 9/A]	Hsu	ESF	1/84
35/A	Barbados ridge accretionary complex	Westbrook	UK	2/84
38/A	Gulf of Mexico (DeSoto Canyon)	Kennett & al.	US	2/84
39/A	Cape Verde drilling	Hill	UK	2/84
40/A	Logging of site 534 (Blake-Bahamas basins)	Sheridan & al.	US	2/84
34/E	Pacific-Aleutian-Bering Sea (Pac-A-Bers)	D.W. Scholl & al.	US	3/84
41/A	N Barbados forearc: Struc. & hydrology	C.Moore	FR/US	3/84
42/D	Sunda Straits area	Huchon	FR	3/84
43/D	SW Pacific drilling outline	Falvey	AUS	3/84
44/B	Andaman Sea: Tectonic evolution	Peltzer & al.	FR	3/84
45/A	Equatorial Atlantic: Paleoenvironment	Ruddiman	US	3/84
47/D	Manila trench, S.China Sea	Lewis & al.	US	3/84
49/D	Eastern Banda arc/Arafura Sea	Schluter & al.	G	3/84
52/D	Solomon Sea	Milsom	AUS	3/84
53/F	Vertical Seismic Profiling	Phillips & al.	US	3/84
54/C	Sub-Antarctic & Weddell Sea sites	Kennett	US	3/84
55/B	Makran forearc, Pakistan	Leggett	UK	3/84
57/B	Deformation of African-Arabian margin	Stein	US	3/84
58/A	West Baffin Bay	Grant & al.	CAN	3/84
59/A	Continental margin instability testing	Weaver & al.	UK	3/84
60/A	Newfoundland basin: E. Canadian margin	Masson	UK	4/84
6/A	Labrador Sea, ocean crust & paleoceanogr.	Gradstein & al.	CAN	5/84
36/A	Norwegian Sea	Hinz & al.	G	5/84
18/A	Off Galicia Bank	Mauffret & al.	FR	6/84
63/A	Madeira abyssal plain	E.J.T. Duin & al.	NETH	6/84

LISTING OF PROPOSALS

Revised: 5/24/90

A: Atlantic; B: Indian; C: Southern; D: Western Pacific; E: Central and Eastern Pacific; F: Instrumental

JOIDES No	Title	Proponents	Country	Date
64/A	Site NJ-6	Poag	US	6/84
67/D	Tonga-Lord Howe Rise transect	Falvey & al.	AUS	7/84
68/A	Deep basins of the Mediterranean	L.Montadert	FR	7/84
69/F	Rock stress meas. in part of Norwegian Sea	Stephansson	ESF	7/84
70/F	Borehole seismic experim. at 417 & 603	Stephen & al.	US	7/84
72/A	Two-leg transect on Lesser Antilles forearc	Speed & al.	CONSOR.	7/84
37/E	Costa Rica, test of duplex model	Shiple & al.	US	8/84
74/A	Continental margin of Morocco, NW Africa	Winterer & al.	US	8/84
75/E	Gulf of California	K.Becker & al.	US	8/84
77/B	Seychelles bank & Amirante trough	Mart	US	8/84
78/B	Indus fan	Kolla	US	8/84
79/B	Tethyan stratigraphy & oceanic crust	Coffin & al.	US	8/84
81/A	Ionian Sea transect, Mediterranean	Hieke & al.	G	9/84
82/D	Sulu Sea	Thunell	US	9/84
84/E	Peru margin	Kulm & al.	US	9/84
85/A	Margin of Morocco, NW Africa	D.Hayes & al.	US	9/84
56/B	Intraplate deformation	Weissel et al.	US	10/84
61/B	Madagascar & E Africa conjugate margins	Coffin & al.	US	10/84
65/B	S. Australian margin: Magnetic quiet zone	Mutter & al.	US	10/84
80/D	Sunda & Banda arc	Karig & al.	US	10/84
87/B	Carlsberg Ridge, Arabian Sea: Basalt obj.	J.Natland	US	10/84
90/B	SE Indian Ocean Ridge transect	Duncan	US	10/84
91/B	SE Indian Ocean Oceanic Crust	Langmuir	US	10/84
93/B	W Arabian Sea: upwelling, salinity etc.	Prell	US	10/84
94/B	Owen Ridge: History of upwelling	Prell	US	10/84
95/B	Asian monsoon, Bay of Bengal	D.Cullen & al.	US	10/84
96/B	Bengal Fan (Indus & Ganges Fans)	Klein	US	10/84
98/B	History of atmosph. circ. (Austral. desert)	D.Rea	US	10/84
99/B	Agulhas Basin paleoceanogr. clim. dynamics	W.Coulbourn	US	10/84
100/B	SE Indian Ridge transect: Stratigr. section	J.Hays & al.	US	10/84
101/B	Ridge crest hydrothermal activity	Owen & al.	US	10/84
102/B	Somali Basin	Mathias	US	10/84
103/B	Laxmi Ridge, NW Indian Ocean	Heirtzler	US	10/84
104/B	90° E Ridge transect	Curray & al.	US	10/84
105/B	Timor, arc-continent collision	Karig	US	10/84
106/B	Broken Ridge, Indian Ocean	Curray & al.	US	10/84
107/B	SE Indian Ridge: Stress in ocean lithosph.	Forsyth	US	10/84
108/C	E. Antarctic continental margin (Prydz Bay)	SOP-Kennett	US	10/84
109/C	Kerguelen - Heard Plateau	SOP-Kennett	US	10/84
110/C	Wilkesland - Adelie continental margin	SOP-Kennett	US/FR	10/84
111/C	SE Indian Ocean Ridge transect (subantarctic.)	SOP-Kennett	US	10/84
112/B	Lithosphere targets	SOP-Kennett	US	10/84
113/B	Agulhas Plateau	SOP-Kennett	?	10/84
114/C	Crozet Plateau	SOP-Kennett	FR	10/84
117/B	Northern Red Sea	Cochran	US	10/84
118/B	Cenozoic history of E. Africa	Kennett & al.	US	11/84
76/E	Proposal for axial drilling on the EPR at 13°N	R. Hekinian & al	FR	11/84
62/B	Davie Fracture Zone	Coffin & al.	CONSOR.	12/84
119/B	Early opening of Gulf of Aden	Stein	US	12/84
120/B	Red Sea, Atlantis II deep	Zierenberg & al.	US	12/84

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JOIDES No	Title	Proponents	Country	Date
122/A	Kane fracture zone	Karson	US	12/84
123/E	Studies at site 501/504	Moul	US	12/84
124/E	To deepen Hole 504B	LITHP-K.Becker	US	1/85
125/A	Bare-rock drilling at the Mid-Atl. Ridge	Bryan & al.	US	1/85
126/D	Drilling in the Australasian region	Crook & al.	AUS	1/85
127/D	E Sunda arc & NW Austral. collision	Reed & al.	US	1/85
128/F	Phys.props. in accretionary prisms	Karig	US	1/85
130/D	Evolution of the SW Pacific (N of New Zeal.)	J.Eade	NZ	1/85
131/D	Banda Sea basin: Trapped ocean crust etc.	Silver	US	3/85
132/D	TTT-Type triple junction off Bosco,Japan	Ogawa & al.	J	3/85
133/F	In-situ sampling of pore fluids	McDuff & al.	US	3/85
135/B	Broken Ridge: Thermo-Mechanical Models	Weissel & al.	US/UK	3/85
10/A	Cenozoic circulation off NW Afric	Sarnthein & al.	G/US	4/85
115/B	Agulhas Plateau and adj. basins	Herb & al.	ESF	4/85
116/B	E & Chagos-Laccadive Ridge drilling	Oberhansli & al.	ESF	4/85
142/E	Ontong-Java Pl.:Equat. Pacific depth trans.	L.Mayer & al.	CAN/US	4/85
88/B	Chagos-Laccadive-Mascarene volc. lineament	Duncan & al.	US	5/85
147/D	South China Sea	Wang & al.	CHINA	6/85
179/D	Daito ridges region: NW Philippines Sea	Tokuyama & al.	J	6/85
21/A	Thyrrhenian Basin: Rifting, stretching,accr.	Rehault & al.	FR	7/85
51/D	Sea of Japan	Tamaki & al.	J	7/85
97/B	Equatorial Indian Ocean:Fertil.& carb.comp.	Peterson	US	7/85
136/C	Kerguelen - Heard Plateau	Schlich & al.	FR	7/85
146/D	Toyamu fan, E Japan Sea	Klein	US	7/85
150/B	90°E Ridge & Kerg.-Gausseb. Ridge: hard rock	Frey & al.	US	7/85
151/D	Japan Sea: Mantle plume origin	Wakita	J	7/85
152/F	Borehole seismic experim., Tyrrhenian Sea	Avedik & al.	FR/US	7/85
153/E	Three sites in the SE Pacific	J.Hays	US	7/85
154/D	Banda-Celebes-Sulu basin entrapment	Hilde	US	7/85
156/D	Kita-Yamam. trough, Japan Sea: Massive sulf.	Urabe	J	7/85
157/D	Japan Sea paleoceanography	Koizumi & al.	J	7/85
158/D	Japan Sea & trench: Geochem & sedimentol.	Matsumoto & al.	J	7/85
159/F	Phys.cond. across trench: Izu-Mariana-...	Kinoshita & al.	J	7/85
160/F	Geophys. cond. of lithosp. plate, Weddell Sea	Kinoshita & al.	J	7/85
161/F	Magn.field & water flow measurement	Kinoshita & al.	J	7/85
162/F	Offset VSP on the SW IO Ridge fract.zones	Stephen	US	7/85
164/D	Japan trench & Japan-Kuril trenches juntion	Jolivet & al.	FR	7/85
165/D	Shikoku basin ocean crust	Chamot-Rooke & al.	FR	7/85
166/D	Japan Sea: Evolution of the mantle wedge	Tatsumi & al.	J	7/85
168/D	Japan Sea: Sedim. of siliceous sediments	Iijima & al.	J	7/85
169/C	South Tasman Rise	Hinz & al.	G	7/85
170/D	Valu Fa Ridge, Lau Basin: Back-arc spread.	Morton & al.	US	7/85
30/B	Davie Ridge & Malagasy margin, Indian Ocean	Clocchiati & al.	FR	8/85
50/D	Nankai trough & Shikoku forearc	Kagami & al.	J	8/85
73/C	Antarctic margin off Adelie coast	Wannesson & al.	FR	8/85
92/B	Crozet Basin, seismic observatory	Butler & al.	US	8/85
137/B	Fossil ridges in the Indian Ocean	Schlich & al.	FR	8/85
138/B	Rodrigues triple junction, Indian Ocean	Schlich & al.	FR	8/85
139/B	Agulhas Plateau, SW Indian Ocean	Jacquart & al.	FR	8/85
140/B	Central & N. Red Sea axial areas	Pautot & al.	FR	8/85

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141/B	Indus Fan	Jacquart & al.	FR	8/85
172/D	Mariana forearc, arc & back-arc basin	P.Fryer	US	8/85
173/B	Seychelles, Mascarene Pl., NW Indian Ocean	Patriat & al.	FR	8/85
174/D	Japan Sea: Forearc tectonics	Otsuki	J	8/85
175/D	Japan Trench: Origin of Inner Wall	Niitsuma & al.	J	8/85
176/D	S.Japan Trench: Migration of Triple Junction	Niitsuma	J	8/85
178/D	Nankai trough forearc	Shiki & al.	J	8/85
180/D	N.Philippines Sea: Kita-Amami basin & plat.	Shiki	J	8/85
181/D	Izu-Ogasaw.-Mariana forearc:Crust & mantle	Ishii	J	8/85
182/E	Souder Ridge,Bering Sea: Stratigraphy	A. Taira	J	8/85
184/D	Papua New Guinea/Bismark Sea Region	N.Exon & al.	AUS/US	8/85
185/C	Kerguelen Plateau: Origin, evol. & paleo.	Coffin & al.	AUS	8/85
186/F	SW Ind.Ocean fracture zones hydrology etc.	von Herzen	US	8/85
86/B	Red Sea	Bonatti	US	9/85
187/D	New Hebrides arc region, SW Pacific	F.Taylor & al.	US	9/85
188/F	395A boreh.geophys. & 418A drill.& geophysics	M.Salisbury	CAN	9/85
189/D	Tonga Ridge and Lau Ridge Region	A.Stevenson & al.	US	10/85
191/D	Solomon Isl.: Arc-plateau coll. & intra arc	Vedder & al.	US	10/85
192/E	Baranoff fan, SE Gulf of Alaska	Stevenson & al.	US	10/85
193/F	Upper ocean partic.fluxes in Weddell Sea	Biggs	US	11/85
3/E Rev/1	Flexural moat, Hawaiian Islands	A.B. Watts & al	US	11/85
143/F	In-situ magnet. susc. measurements	Krammer & al.	G	12/85
195/E	Paleoenv. & Paleoclim. in the Bering Sea	C. Sancetta & al.	US	12/85
196/B	90°E Ridge: Impact of India on Asia	J.Peirce	CAN	12/85
197/B	Otway Basin/W.Tasman region	Wilcox & al.	AUS	12/85
198/D	Ulleung Basin: Neogene tectonics & sedim.	Chough & al.	COREA	12/85
199/E	Pelagic sediments in the sub Artic gyre (N.Pacific)	T.R. Janecek & al.	US	12/85
200/F	Borehole magnet. logging on leg 109 (MARK)	Bosum	G	12/85
201/F	High-precision borehole temp. measurements	Kopietz	G	12/85
205/A	Bahamas: Carb.fans, escarpm.erosion & roots	Schlager & al.	ESF	12/85
202/E	N.Marshall Isl. carbonate banks	S.O. Schlanger	US	1/86
203/E	Guyots in the central Pacific	E.L. Winterer & al.	US	1/86
207/E	Bering Sea basin & Aleutian ridge tectonics	Rubenstein	US	1/86
208/B	Ancestral triple junction, Indian Ocean	Natland & al.	US	1/86
209/C	Eltanin fracture zone	Dunn	US	1/86
210/E	NE Gulf of Alaska: Yakutat cont. margin	Lagoe & al.	US	1/86
211/B	Deep stratigraphic tests	SOHP -Arthur	US	1/86
212/E	Off northern & central California	Greene	US	1/86
213/E	Aleutian subduction: accret. controlling p.	McCarthy & al.	US	1/86
214/E	Central Aleutian forearc:Trench-slope break	Ryan & al.	US	1/86
215/B	Red Sea: Sedim. & paleoceanogr. history	Richardson & al.	US	2/86
216/D	South China Sea	Rangin & al.	FR	2/86
217/D	Lord Howe Rise	Mauffret & al.	FR	2/86
218/D	Manila trench & Taiwan collis.zone, SCS	Lewis & al.	US	2/86
219/B	Gulf of Aden evolution	Simpson	US	3/86
220/D	Three sites in the Lau Basin	J. Hawkins	US	3/86
222/E	Ontong-Java Pl.: Origin, sedim. & tectonics	Kroenke & al.	US	3/86
221/E	Equatorial Pacific: late Cenoz. Paleoenv.	N.G. Piasias	US	3/86
83/D	Izu-Ogasawara (Bonin) arc transect	Okada & al.	J	4/86
134/B	Gulf of Aden	Girdler	UK	4/86

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171/D	Bonin region: Intra-oceanic arc-trench dev.	B.Taylor	US	4/86
223/B	Central Indian Ocean fracture zone	Nauland & al.	US	4/86
225/E	Aleutian Basin, Bering Sea	A.K.Cooper & al.	US	4/86
224/E	Escanaba Trough (Gorda Ridge), NE Pacific	M. Lyle & al	US	4/86
89/B	SWIR, mantle heterogeneity	Dick & al.	US	5/86
121/B	Exmouth & Wallaby Pl. & Argo Abys. Plain	U.von Rad & al.	US	5/86
129/C	Bounty trough	Davey	NZ	5/86
227/E	Aleutian Ridge, subsidence and fragment.	Vallier & al.	US	5/86
228/C	Weddell Sea (E Antarctic contin. margin)	Hinz & al.	G	5/86
229/E	Bering sea, Beringian conti. slope & rise	A.K. Cooper & al.	US	5/86
230/C	Wilkes Land margin, E Antarctica	Eittreim & al.	US/J	5/86
231/E	North Pacific magnetic quiet zone	Mammerickx & al.	US	5/86
232/E	N.Juan de Fuca R.: High temp.zero age crust	E.Davis & al.	CAN	5/86
26/D	Tonga-Kermadec arc	Pelletier & al.	FR	6/86
144/D	Kuril forearc off Hokkaido: Arc-arc collis.	Seno & al.	J	6/86
145/D	Ryukyu arc: Left-lateral dislocation	Ujue	J	6/86
148/D	Near TTT-type triple junction off Japan	Ogawa et al.	J	6/86
149/D	Yamoto Basin,Sea of Japan: Active Spreading	Kimura & al.	J	6/86
167/D	Okinawa trough & Ryukyu trench	Uyeda & al.	J	6/86
234/E	Aleutian trench: Kinematics of plate cover.	von Huene & al.	US	6/86
235/D	Solomon Sea: Arc-trench dev., back-arc...	Honza & al.	CONSOR.	6/86
236/E	N.Gulf of Alaska	Bruns & al.	US	6/86
237/E	Active margin off Vancouver Isl., NE Pac.	Brandon & al.	CAN/US	6/86
238/F	Pore pressure in the Makran subduction z.	Wang & al.	US	6/86
239/D	Two sites in the Lau Basin	D.Cronan	UK	6/86
214/E	Gulf of Alaska (Yakutat block) & Zodiak fan	Heller	US	6/86
243/D	Outer Tonga trench	Bloomer & al.	US	6/86
240/B	Argo abyssal Plain	Gradstein	CONSOR.	7/86
245/E	Transform margin of California	Howell & al.	US	7/86
246/B	Mesozoic upwelling off the S.Arabian margin	Jansa	CAN	7/86
247/E	NE Pacific: Oceanogr.,climatic & volc. evol.	D. Rea & al.	US/CAN	7/86
226/B	Equat.Indian Ocean: carb. system & circul.	Prell & al.	US	8/86
244/C	Western Ross Sea	Cooper & al.	US/NZ	8/86
248/E	Ontong-Java Plateau	Ben-Avraham & al.	US	8/86
249/E	Sedimentation in the Aleutian trench	Underwood	US	8/86
250/E	Navy fan, California borderland	M..B. Underwood	US	8/86
251/B	Seychelles-Mascarene-Saya de Mayha region	S.N. Khanna	SEYCH.	8/86
253/E	Shatsky Rise:Black shales in ancestr. Pac.	S.O. Schlanger & al.	US	8/86
254/A	NW Africa: Black shales in pelagic realm	Parrish & al.	US	8/86
255/A	Black shales in the Gulf of Guinea	Herbin & al.	FR/US	8/86
256/E	Queen Charlotte Transform fault	Hyndman & al.	CAN	9/86
257/E	Farallon Basin, Gulf of California	L. Lawver & al.	US	9/86
204/A	Florida escarpment transect	Paul & al.	US	10/86
252/E Rev.	Loihi Seamount, Hawaii	H. Staudigel & al.	US	10/86
258/E	Stockwork zone on Galapagos Ridge	R. Embley & al	US	10/86
260/D	Ogasawara Plateau, near Bonin arc	T. Saito & al.	J	10/86
261/E	Mesozoic Pacific Ocean	R.L. Larson & al.	US/FR	10/86
262/B	Mid Indus Fan	B.Haq	US	11/86
263/E	S.Explorer Ridge, NE Pacific	R.L. Chase & al.	CAN	11/86
206/D	Great Barrier R.: Mixed carb/epiclast.shelf	Davies & al.	AUS	12/86

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JOIDES No	Title	Proponents	Country	Date
264/A	Montagnais impact struct., Scotia Sh.	Grieve & al.	US	12/86
265/D	Western Woodlark Basin	S.D. Scott & al.	CAN/AUS/PNG	12/86
266/D	Lau Basin	Lau Group	CONSOR.	12/86
267/F	Old crust at converg. margins: Argo & W.Pac	C.H. Langmuir & al	US	12/86
268/D	Hydrothermal ore deposition, Queensland Pl.	Jansa et al.	CAN	12/86
269/E	Aleutian pyroclastic flows in marine envir.	Stix	CAN	12/86
27/D Rev.	Sulu Sea marginal basin	Cl. Rangin & al	FR	1/87
48/D Add.	Sulu Sea transect	Cl. Rangin	G/FR	1/87
270/F	Tomographic imaging of hydrotherm. circul.	Nobes	CAN	1/87
271/E	Paleoceanogr. trans. of California current	Barron & al.	US	2/87
272/F	Long-term downh. measurem.in seas a. Japan	Kinoshita	J	2/87
183/D	Periplatform ooze, Maldives, Indian Ocean	Droxler & al.	US	3/87
259/E Rev.	Meiji sediment drift, NE Pacific	L.D. Keigwin	US	3/87
274/D	South China Sea	Zaoshu & al.	CHINA	3/87
275/E	Gulf of California (composite proposal)	Simoneit & al.	US	3/87
232/E Add.	Clay miner. & geoch.: Juan de Fuca Ridge	B. Blaise & al.	CAN/FR	3/87
276/A	Equat. Atlantic transform margins	J.Masclé	FR	4/87
277/E	Aseismic slip in the Cascadia margin	Brandon	US	4/87
278/E	Blanco transf. fault: Alter., layer three.	R. Hart & al	US	5/87
279/E	Anatomy of a seamount: Seamount 6 near EPR	R.Batiza	US	5/87
280/E	Cretac.Geisha Seamounts & guyots, W-Pac	P.R. Vogt et al.	US	6/87
281/D	Accret.prisms at Kuril/Japan trench&Nankai Tr.	Y. Okumura & al.	J	6/87
282/E	Tracing the Hawaiian hotspot.	N. Niitsuma & al.	J	6/87
283/E	Kuroshio current and plate motion history	R.D.Jacobi & al.	US	6/87
284/E	Escanaba Trough,S-Gorda Ridge Hydrothermalism	Zierenberg & al.	US	7/87
285/E	Jurassic quiet zone ,Western Pacific	Handschumacher & al.	US	7/87
286/E	Return to 504/B to core & log layer 2/3 trans.	K.Becker	US	7/87
287/E	Deep drilling in the M-Series,Western Pacific	D. Handschumacher & al.	US	8/87
288/B	Repositioning of EP2 to EP12,Exmouth Plateau	Mutter & al.	US	8/87
289/E	Mass budget in Japan Arc-10Be Geochemical Ref.	S. Sacks & al.	US/J	8/87
66/F Rev.	Laboratory rock studies to reveal stress	N.R. Brereton	UK	9/87
76/E Rev.	EPR: oceanic crust at the axis	R. Hekinian	FR	9/87
177/D Rev.	Zenisu Ridge: Intra-oceanic plate shortening	A. Taira & al.	J/FR	9/87
224/E Rev.	Escanaba trough (Gorda Ridge), NE Pacific	M. Lyle & al	US	9/87
242/D	Backthrusting & back arc thrust., Sunda arc	Silver & al.	US	9/87
290/E	Axial Seamount, Juan de Fuca Ridge	P.Johnson & al.	US	9/87
291/E	Drilling in the Marquesas Islands chain.	J.H. Natland & al.	US	9/87
292/D	Drilling in the SE Sulu Sea	Hinz & al.	G	9/87
293/D	Drilling in the Celebes Sea	K. Hinz & al.	G	9/87
155/F Rev/1	Downhole measurt.in the Japan Sea	T. Suyehiro & al	J	9/87
294/D	Ophiolite analogues in the Aoba Basin,Vanuatu	J.W.Servais	US	10/87
46/D	South China Sea margin history	D.Hayes & al.	US	11/87
273/C	Southern Kerguelen Plateau	Schlich et al.	FR/AUS	11/87
295/D	Hydrogeol.& structure,Nankai accr.complex	J.M. Gieskes & al.	US	12/87
296/C	Ross Sea, Antarctica	Cooper & al.	US/NZ/G	12/87
297/C	Pacific Margin of Antartic Peninsula	P.F. Barker	UK	12/87
247/E Rev.	NE Pacific: Oceanogr.,climatic & volc.evol.	B.D. Bornhold	CAN/US	1/88
298/F	Vertical seismic prof. in Nankai Tr. ODP Sites	G.F. Moore	US	1/88
299/F	Self-bor. p-meter: study deform.in accr. sed.	M.Brandon & al.	US/CAN	2/88

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JOIDES No	Title	Proponents	Country	Date
300/B	Return to site 735B-SW Indian Ridge	H. Dick & al.	US/CAN	2/88
301/D	Integrated proposal: Nankai forearc	J.Gieskes & al.	US/J	3/88
302/F	Electrical conductivity structure, E-Japan Sea	Y.Hamano & al.	J	3/88
194/D Rev/2	South China Sea	K.J. Hsü & al.	CHINA	4/88
303/E	Fracturing /volcanism on Hawaiian swell	B.Keating	US	4/88
190/D Add.	New Hebrides (Vanuatu) arc-ridge collision	Fisher & al.	US/FR	5/88
163/D Rev.	Zenisu Ridge: Intraplate deformation	S. Lallemand & al	FR	6/88
221/E Suppl.	Equatorial Pacific: L. Cenozoic paleoenvir.	N. Pias & al.	US	6/88
304/F	ODP Nankai downhole observatory	H.Kinoshita & al.	J	6/88
305/F	Arctic Ocean drilling	P.J. Mudie & al.	CAN	6/88
306/E	Old Pacific History	Y.Lancelot & al.	FR/US	6/88
233/E Rev.	Oregon accr. complex: fluid proc. & struct.	L.D. Kulm & al.	US	7/88
307/E	Cross Seamount, Hawaiian swell	B. Keating	US	7/88
308/E	Reactivated Seamounts, Line Island chain.	B.Keating	US	7/88
3/E Add.	Drilling in vicinity of Hawaiian Islands	R.S.Detrick & al	US	7/88
222/E Rev.	Ontong Java Pl.: origin, sedim. & tectonics.	J. Mahoney & al.	US	7/88
155/F Rev/2	Downhole measurement in the Japan Sea	T. Suyehiro & al	J	8/88
309/F	VSP Program at sites Bon-2 and Bon-1	P.Cooper	US	9/88
310/A	Geochemical sampling, dippings, E-Groenland	A.Morton & al.	UK	9/88
311/A	Sedim. equivalent of dippings, Rockall	D.Masson & al.	UK	9/88
312/A	Potential of drilling on Reykjanes Ridge	J.Cann & al.	UK	9/88
313/A	Evolution of oceanog. pathway: The Equat. Atlan.	E.Jones & al.	UK	9/88
314/D	Fluid flow & mechan. response, Nankai	D.Karig & al.	US	9/88
316/E	To drill a gaz-hydrate hole (West Pacific)	R. Hesse & al.	CONSOR.	9/88
59/A Rev.	Continental margin sediment instability	P.P.E. Weaver & al	UK/NETH/CAN	9/88
3/E Rev/2	Flexural moats, Hawaiian Islands	A.B. Watts & al.	US	10/88
315/F	Network of perm. ocean floor broad band seism.	G.M. Purdy & al.	US	10/88
275/E Rev.	Drilling the Gulf of California	Simoneit (ed.) & al	US	10/88
271/E Rev.	Paleocean. transect of California current	J.A. Barron & al	US	10/88
195/E Suppl.	Paleoenvir. and paleoclim. in the Bering Sea	D.W. Scholl & al	US	10/88
199/E Suppl.	High latitude paleoceanography	D.W. Scholl & al	US	10/88
231/E Suppl.	Plate reconstr. & Hawaiian hotspot fixity.	D.W. Scholl	US	10/88
225/E Suppl.	Plate-Reconstr.: Bering Sea	D.W. Scholl & al.	US	10/88
317/E Rev.	Northern Cascadian Subduction Zone	R.D.Hyndman & al.	CAN	12/88
318/E Rev.	Chile Margin Triple Junction	S.C.Cande & al	US	1/89
319/E Rev.	An extinct hydrotherm. syst., East Galapagos	M.R. Perfit & al	US/CAN	2/89
320/A	High Northern latitude paleocean. & paleoclim.	E. Jansen & al	NOR/SWED.	3/89
321/E	The EPR ridge crest near 9°40' N	D.J. Fornari & al	US	3/89
322/E	Ontong Java Plateau-pipelike structures.	P.H. Nixon	UK	3/89
323/A	Gibraltar Arc	M.C. Comas & al	CONSOR	4/89
324/A	Tecton. evol. of W. & E. Mediterr. since Mesozoic	P. Casero & al.	IT/G	4/89
142/E Rev.	The Ontong Java Plateau	L. Mayer & al.	CAN/US/UK	4/89
325/E	High temp. hydrother. site N. Juan de Fuca Ridge	H.P. Johnson & al	US/CAN/UK	5/89
326/A	Continental margin of Northwest Morocco	K. Hinz & al	G	5/89
327/A	Argentine continental rise	K. Hinz & al	G/ARG	5/89
203/E Rev.	Cretaceous guyots in the Northwest Pacific	E. L. Winterer & al	US	5/89
328/A	Continental margin of East Greenland	K. Hinz & al	G	6/89
329/A Rev.	Paleocommunication between N & S Atlantic	J.P. Herbin & al.	FR	7/89
330/A	Mediterranean ridge, accretionary prism	M.B. Cita & al.	I/G	7/89
331/A	"Zero-age" drilling: Aegir ridge	R.B. Whitmarsh & al.	UK/G/FR	7/89

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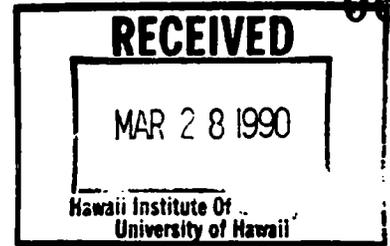
JOIDES No	Title	Proponents	Country	Date
332/A	Florida escarpment drilling transect	C.K. Paul & al.	US	7/89
333/A	Tectonic and magmatic evolution: Carribean sea	B.Mercier de Lepinay &al.	FR/US	7/89
334/A	The Galicia margin new challenge	G. Boillot & al.	FR/SP	7/89
335/E Rev.	Drowned atolls of the Marshall Islands.	S.O. Schlanger & al.	US	7/89
336/A	Arctic to north Atlantic gateways	J. Thiede	G	7/89
337/D	To test the sedim. architect. Exxon sea-level curve	R.M. Carter & al.	A/NZ/US	7/89
338/D	Neogene sea-level fluctuations: NE Australia	C.J. Pigram & al.	A	8/89
339/A	Drilling transects of the Benguela current	L. Diester-Haass & al.	G/US	8/89
340/D	Evolution of foreland basins: N. Australia	M. Apthorpe & al.	A	8/89
341/A	Global climatic change-Holocene	J.P.M. Syvitski	CAN	8/89
342/A	The Barbados accretionary prism	R.C. Speed & al.	US/UK/FR	8/89
343/A	Drill in window Cret. volc. form. Caribbean	A. Mauffret & al.	FR	8/89
344/A	Western N. Atl. Jurassic magnetic quiet zone	R.E. Sheridan	US	8/89
345/A	Sea level and paleoclim. West Florida margin	J.E. Joyce & al.	US	8/89
346/A Rev.	The Equatorial Atlantic transform margin	J.Masclé & al.	FR	8/89
347/A	Late Cenozoic paleocean., S.Equat. Atlantic	G. Wefer & al.	G/US	8/89
348/A	Upper Paleoc. to Neog. sequence: mid Atl. margin	K.G. Miller & al.	US	8/89
349/A	Clastic apron of Gran Canaria.	H.-U. Schmincke & al.	G/US/UK	8/89
350/E	Gorda deformation zone off N. Calif.	M. Lyle & al.	US	9/89
351/C	Bransfield Strait	D.C. Storey & al.	UK/US/G	9/89
352/E	Drilling into Layer 3, Mathemat. Ridge	D.S. Stakes & al.	US	9/89
353/C Rev.	Antarctic Peninsula, Pac. margin	P.F. Barker & al.	UK	9/89
354/A	Angola/Namibia upwelling system	G. Wefer & al.	G/US	9/89
355/E	Formation of a gaz hydrate	R. von Huene & al.	G/US	9/89
271/E Rev/2	APC coring seamounts off California.	J. Barron	US	9/89
233/E Rev/2	Oregon accretionary complex	L.D. Kulm & al.	US/G	9/89
356/A	Denmark Str.,Greenl. Scotl.&Jan Mayen ridges	P.P. Smolka & al.	G	9/89
357/E Rev.	East Pacific Rise near 12°50'	R. Hékinian & al.	FR/US	10/89
286/E Add.	Layer 2/3 transition at hole 504B	K. Becker	US	10/89
355/E Rev.	Formation of a gaz hydrate	R. von Huene & al.	G/US	10/89
221/E Add.	Eastern Equatorial Pacific Neogene	N.G. Pisiás & al.	US	11/89
317/E Add.	Northern Cascadia subduction zone	R.D. Hyndman & al.	CAN	11/89
358/A	To drill a transect at the Vøring margin	O. Eldholm & al.	NOR	11/89
359/A	North Atlan. conjug. passive margin	B. Tuchloke & al.	US/CAN/FR	11/89
360/D	Valu Fa Ridge (Southern Lau Basin)	U. von Stackelberg & al	CONSOR.	12/89
361/A	Active Hydrotherm. Mid-Atlantic Ridge	G. Thompson & al.	US /UK	1/90
362/E Rev.	Chile margin triple junction	S.C. Cande & al.	US/UK	1/90
363/A	Plume volcanism: Grand Banks - Iberia separation	B.E. Tucholke & al.	US/CAN	1/90
364/A	Thrust units of contin. basement: central Mediter.	R. Sartori & al.	I/FR	1/90
330/A Add.	Mediterranean ridge, accretionary prism	M. Cita & al.	I/G	1/90
365/A	Conjugate passive margin - N.Atlantic	J. Austin & al.	US/CAN/FR	1/90
366/A	Labrador - Greenland (Preliminary)	M.H. Salisbury	CAN	1/90
367/C	Cool water carbonate margin: S. Australia	N.P. James	CAN	2/90
368/E	Jurassic Pacific crust: return to 801C	R.L. Larson & al.	US/UK	2/90
369/A	A deep mantle section in the Mark area	C. Mevel & al.	FR	2/90
370/A	Magmatic proces. & natur. tracers: Oceanogr. FZ	H.J.B. Dick & al.	US/CAN	2/90
371/E	To drill the Nova-Canton Trough	K. Becker & al.	US	2/90
372/A	Water circul. & vertical chemi. gradients Cenozoic	R. Zahn	CAN	2/90
373/E	Revisiting Site 505	M.D. Zoback & al.	US	3/90
374/A	Mantle heterogeneity Oceano. Fracture Zone	H.J.B. Dick & al.	US	3/90

LISTING OF PROPOSALS

Revised: 5/24/90

A: Atlantic; B: Indian; C: Southern; D: Western Pacific; E: Central and Eastern Pacific; F: Instrumental

JOIDES No	Title	Proponents	Country	Date
375/E	Deep crustal drilling: Hess Deep	H.J.B. Dick & al.	US	3/90
376/A	Layer 2/3 boundary: Vema fracture zone	J.M. Auzende & al.	FR	3/90
377/F Rev.	Global network ocean floor seismometers	G.M. Purdy & al.	US	3/90
378/A Rev.	Barbados accretionary wedge	R.C. Speed & al.	US/UK/FR	3/90
379/A	Scientific drilling Mediterranean Sea	J. Mascle	FR	3/90
380/A Rev.	Clastic apron of Gran Canaria	H.-U. Schmincke & al.	G	3/90
381/A	Continental shelf and slope of Argentina	B.T. Huber	US	3/90
382/A	Upper mantle-lower crust: Vema F.Z.	E. Bonatti	US	5/90
383/A	Aegean sea: continent-continent collision	K.A. Kastens & al.	US/ESF	5/90



90-170

BCOM Report
6, 7 and 8 March 1990
Washington, D.C.

1. BCOM met in Washington D.C. on 6, 7 and 8 March 1990. Members present were Brian Lewis in the chair, Jim Briden, Hans Durbaum, Ralph Moberly and Jamie Austin. Also present for part of the time were Xenia Golovchenko (LDGO), Phil Rabinowitz and Audrey Meyer (TAMU), and Tom Pyle and Ellen Kappel (JOI).

1.1 NSF provided a target budget of \$39.3 M from U.S. and partner-country funds and would consider a further \$0.3 M specifically for further technological development above that supportable through base budget and 4% SOE. EXCOM in 1988 had projected that total costs for FY1991 would be \$40M.

2. Emphasis on New Technology.

In NSF's letter of 2 January, 1990 to JOI Inc. concerning the FY91 Program Plan it is mentioned that "NSF is prepared to consider arguments for additional resources above the target level for engineering and technology development in the FY budget - providing that these additional funds represent a real increment above FY90 levels in this category." BCOM welcomes this offer in the light of the necessity on one hand to improve the Diamond Coring System and to make it operational soon, and on the other hand to have the necessary high-temperature slimhole tools developed. There have since been negotiations between JOI Inc. and Sandia Laboratories on necessary developments and adaptations to HT tools for ODP purposes. BCOM recommends that JOI Inc. not only propose to NSF that the \$300,000 be spent in this way, but also that a further \$150,000 be allocated for a duplicate set of these tools.

3. Proposals to BCOM.

The proposed draft budget totals presented to BCOM were:

	<u>Presented</u>	
TAMU	\$35,971,000	
LDGO	3,760,200	
JOI/JOIDES	1,377,865	
MRCs	70,000	(Micropaleo Reference Centers)
SANDIA	<u>450,000</u>	
TOTAL	\$41,629,065	

In the morning of 6 March, excellent presentations were made by JOI, TAMU and LDGO to the committee, which provided the BCOM with an overview of the budget requests. In the discussions that developed, problems that needed attention from the BCOM were identified.

In the late afternoon of 6 March the BCOM reviewed, in executive session, the budget in terms of the FY91 program plan, the long-range outlook for ODP, recommendations by recent reviews of ODP, and the necessity to balance the budget. It was recognized that:

3.1 There were two elements of the budget that are non-negotiable by JOI Inc., namely the SEDCO and Schlumberger contracts.

TABLE 1

Budget Summary FY 91

		<u>Bids presented to BCOM</u>	<u>BCOM Allocation</u>
TAMU	Base	\$32,640,000 ¹	\$32,715,000 ²
	SOE	3,331,000	1,602,000
LDGO	Base	3,346,000	3,316,218 ³
	SOE	414,200	256,000
JOI/JOIDES		1,377,865	1,340,782 ⁴
MRC		70,000	70,000
Sandia		450,000	450,000 ⁵
		<u>\$41,629,065</u>	<u>\$39,750,000</u>
		Including SOE	\$1,858,000
			+ \$450,000 } note 6

- Notes: 1. Base budget bid against target \$34M less 4% SOE
2. \$75,000 TAMU SOE bid for Pressure Core Sampler agreed within base budget—see Table 2
3. Includes \$30,000 LDGO base bid for CONOCO consortium fee agreed but classified as SOE by BCOM
4. \$37,083 reduction to set JOIDES Advisory Services ceiling at \$550,509
5. Subject to NSF allocating funds, see paragraph 2
6. SOE to TAMU and LDGO = 4.9% of their combined budgets; this rises to 6.02% if the \$450,000 Sandia item is included

3.2 Such items as fuel, port-call costs, and travel costs are difficult to predict, but TAMU, LDGO, and JOI had made realistic estimates of probable costs.

3.3 One potential increase in the SEDCO day-rate has been budgeted. As in previous years, day-rate increases and deductibles for insurance claims will have to be dealt with by management if they occur.

3.4 JOI Overhead. JOI Inc. is in the process of renegotiating the way in which it calculates its general and administrative costs (G&A) related to the ODP. If successful in this process JOI anticipates a reduction of \$400,830 in this amount relative to FY 1990 costs. This provided a corresponding increase in the funds available for other activities.

3.5 Publications. In the FY90 program BCOM recommended that SOE be assigned to speed up publications. TAMU has implemented this recommendation with the result that by the end of FY90 the backlog of volumes in preparation for publication will have been eliminated. TAMU requested special funds to print this backlog.

3.6 Transportation of cores from ship. BCOM noted that concern had been expressed by IHP and co-chiefs that funds were insufficient to transport the cores from the ship after every leg. TAMU gave assurance that their base budget indeed covers this item.

3.7 Drilling Schedule. The science plan approved by PCOM for FY1991 calls for extensive early use of the diamond coring system (DCS). This impacts the scheduling of funds for development of the DCS in FY91 and was a major factor in the BCOM recommendations.

3.8 Base budgets and inflation. The base budget for all contractors had increased by about 4%, approximately commensurate with the present rate of inflation in the U.S.A. BCOM endorsed this rate of increase in the base budgets but is aware that inflation above 4% in FY1991 will have a detrimental result on the program.

3.9 The target of at least 4% Special Operating Expenses (SOE) must be achieved and utilized for the purposes originally intended by JOIDES. SOE is calculated on the total budget minus the JOI/JOIDES budget.

On the morning of 7 March BCOM obtained additional comments from JOI and the subcontractors about their programs. During the remainder of the day, BCOM, in executive session, developed the following recommendations.

4. Budget Recommendations:

4.1 Base Budget

BCOM was especially pleased to note that the base-budget requests were close to the projected inflationary rates and also had reflected the general advice of JOIDES. Even though the total requests by the subcontractors were beyond the total funds available for FY91, the level requested in the base budget was sufficiently restrained that a modest sum was available for the vital Special Operating Expenses that are discussed in a following section. BCOM thanks TAMU, LDGO, and JOI-JOIDES for this restraint.

BCOM decided:

- (1) that the further development of the pressure core sampler (PCS II) be considered a normal advancement of engineering development, and therefore added \$75,000 to the TAMU base budget,
- (2) that the request to join the CONOCO consortium is properly an SOE and therefore transferred its one-time cost of \$30,000 from the LDGO base budget to the SOE category,
- (3) that the separate item for a radiolarian component to the MRCs be transferred to become a part of the JOI-JOIDES base budget (realizing that this will be subcontracted by JOI at some figure near \$70,000 based on bidding not yet complete), and
- (4) that the JOIDES Advisory Services part of the JOI base budget be reduced \$37,083 from the requested \$587,592 to \$550,509. These adjustments to the budget are summarized in Table 1.

4.2 Special Operating Expenses

To ensure the "innovation content" of the Ocean Drilling Program, BCOM recommended that for FY91, SOEs should be allocated to four initiatives (Tables 2 and 3): acceleration of the continued development of the diamond coring system, development of high-temperature logging capability, acceleration of the publication schedule of both the "Initial Reports" and "Scientific Results" volumes, and selected enhancements to the existing program.

4.2.1 Diamond Coring System (\$843,000): The promise of better core recovery in young brittle ocean crust and other lithologies difficult to sample, has led JOIDES to recommend further developments and improvements of the DCS, including (a) post-ENG II (Leg 132) improvements, (b) preparation for ENG III (Leg 136), including testing of the DCS/drill-in bottom-hole assembly (BHA), and (c) longer term development of technology. The exact distribution of efforts by TAMU funded within this SOE will await the outcome of Leg 132, but by allocating the largest SOE to this initiative and listing it first among these four SOEs, BCOM emphasizes the importance of the DCS as a development necessary to achieve several important scientific themes of the program.

4.2.2 High-temperature logging (\$180,000): BCOM approves LDGO's requested SOE for repackaging the slimhole formation resistivity, gamma ray, and sonic tools, either through work at BRG at LDGO or by subcontract. BCOM also acknowledges with great appreciation the donation of these tools to BRG from ARCO. These tools and those being proposed separately from Sandia must be available in a timely manner for much of the drilling activities proposed in the immediate future of the program.

4.2.3 Publications (\$172,000): The scientific community has been critical of the rate at which publications of ODP results have appeared. BCOM commends TAMU for its success in responding to that criticism. To capitalize on this success BCOM recommends that \$172,000 be allocated beyond the TAMU base budget, to print four volumes beyond the normal 12 volumes budgeted for FY91. BCOM agreed with TAMU's assertion that publication staff will be adequate to maintain a steady-state schedule.

TABLE 2

TAMU Requested SOE, in priority order

	<u>Requested</u>	<u>Allocated</u>
1. Publication: production of two additional volumes of <i>Proceedings</i> .	\$86,000	\$86,000
2. Computers	99,000	37,000 (note 1)
3. Gulf Coast Repository, extension of refrigeration FY92	89,000	deferred to
4. Drilling Operations; replacement for exceptional high losses of supplies	450,000	450,000
5. Engineering Developments: Diamond Coring System	461,000	461,000
Pressure Core Sampler	75,000	(note 2)
6. Scientific Equipment: CD-ROM for ODP database	43,000	43,000
other equipment and projects	57,000	57,000 (note 1)
7. Further development of Diamond Coring System High temperature fluid sampler (note 3)	900,000	382,000
8. Additional Electronics/Marine Technical support	100,000	_____
9. Publication: two further volumes, additional to item 1 above	86,000	86,000
new publications staff	185,000	_____
10. Additional Science Equipment:		
Real-time navigator	250,000	
Color imaging device	175,000	
Whole core X-ray	30,000	
Petrology photocopier	5,000	
IBM-PCs	33,000	
MARISAT replacement	30,000	
	523,000	_____
11. Three Staff Scientists (salary and recruiting costs) for editorial support	<u>177,000</u>	_____
	<u>\$3,331,000</u>	<u>\$1,602,000</u>

Notes to TAMU requested SOEs

1. Final decision on the spending of \$37,000 and \$57,000 approved in items 2 and 6 respectively to be determined by JOIDES advisory structure (see paragraph 4.2.4 (b)).
2. Pressure core sampler funding agreed, but assigned to base budget by BCOM.
3. TAMU also put in a holding bid for an additional \$300,000 which has been subsumed into the \$450,000 request to NSF for supplementary funds for new technology (see "Sandia" item in Table 1, and paragraph 2 in text).

TABLE 3

LDGO Requested SOE. in priority order

	<u>Requested</u>	<u>Allocated</u>
1. Hot temperature tools, dewarring, etc. of slimline tools donated by ARCO.	\$180,000	\$180,000
2. Shipboard specialist for FMS Processing	46,000	46,000 (note 1)
3. Postdoctoral fellow for Borehole Research Group	51,400	Not approved
4. Assistant Systems Manager	54,100	"_____"
5. High density tape drive	13,000	"_____"
6. Disk drives for Masscomps	14,000	"_____"
7. Second-hand Masscomp 5520 for back-up and spares	20,000	"_____"
8. Mac II x 4	18,000	"_____"
9. Apple scanner	1,200	"_____"
10. Maxtor disc drive spare for shipboard VAX	3,000	"_____"
11. Futher Masscomp upgrades	11,000	"_____"
12. Tektronix color printer for Mac II	<u>2,500</u>	"_____"
	\$414,200	\$226,000
13. CONOCO consortium fee requested by LDGO in base budget but allocated to SOE by BCOM		<u>30,000</u>
		\$256,000

Note 1. Approved for 1 year only as SOE

4.2.4 Additional response to JOIDES Advice (\$663,000): Based on recommendations of the science advisory structure and after further questioning of the subcontractors, BCOM recommends the following SOE items beyond the TAMU and LDGO base budgets:

(a) Drilling operations (\$450,000).

Recognizing the requirement to replenish drilling supplies after the abnormally high losses of BHAs and televiewers in the past few months, BCOM recommends \$450,000 for TAMU for partial replenishing of its inventory.

(b) Shipboard measurements and information handling (\$100,000) and computers (\$37,000).

TAMU requested a total of \$722,000 for shipboard and shore-based scientific equipment and projects, including computers (items 2,6 and 10 in Table 2). BCOM approved \$43,000 for development of a CD-ROM of the ODP data base for public distribution, and \$94,000 to be expended for the highest-priority recommendations of the SMP and IHP panels (see Table 2, note 1). These panels are meeting in March 1990 to set their recommendations into priority; PCOM will forward specific recommendations to JOI. The \$32,000 for shore-based computer equipment and \$30,000 for programming support requested by TAMU as SOEs should be absorbed, if possible, within the TAMU base budget.

(c) FMS Specialist, \$46,000:

The strong impact of the Formation Microscanning Tool (FMS) on the interpretation of structure and lithology of ODP holes requires speedy processing of FMS logs onboard ship. BCOM recommends an SOE of \$46,000 to LDGO for a one-year trial of a 0.5 FTE technician (shared with 0.5 technician within the TAMU base budget) to process FMS logs on the *Resolution*.

(d) CONOCO Consortium (\$30,000).

BCOM recommends funding LDGO's BRG membership in the CONOCO logging-test consortium. We strongly prefer one-time SOE of \$30,000 for membership fees rather than the alternative of using BRG personnel for reprocessing geochemical logs for the consortium.

4.2.5 Gulf Coast Repository: To clarify one specific item, in light of the funding cycle and the lead-time necessary, we defer the request by TAMU for funds to expand core-storage capacity in the Gulf Coast Repository; but recognize this must be a high priority SOE for the FY92 BCOM deliberations.

4.3 Outline budgets incorporating the BCOM recommendations are attached as Annex A.

5. Long-Range Implications:

The previously described allocations of funds allow both for stable base budgets, and SOE expenditures well in excess of the minimum levels mandated by EXCOM. BCOM, however, notes with anxiety that FY91 budgetary flexibility has occurred only as a result of a number of factors being favorable simultaneously; the inflationary climate resulting in only modest increases in day rates and fuel charges; the willingness of all program subcontractors to prioritize their special needs in the context of base budgets cognizant of ambient inflation; a substantial reduction in logging-tool insurance premiums; and a one-time saving induced by a change in cost-accounting procedures at JOI Inc. Because these ameliorating effects on expenditures could disappear at any time, BCOM strongly endorses the target figure of \$42 M that EXCOM has proposed for the program in FY92, in line with long-term projections for expected, realistic cost increases.

BCOM passed these recommendations to JOI Inc. for discussions with the subcontractors.

PROGRAMS RANKED THEMATICALLY, APRIL 1990

BRIEF TITLE	LITHP	OHP	SGPP	TECP	JOIDES	Reference
Antarctic Ocean History, near Ross Sea and Antarctic Pen.		m			-	
Antarctic Peninsula Margins (2 legs of 2)				9	297, 351	
Atolls, Guyots, & Aprons, W-C Pacific (2 legs of 2)	4 & 6	3	15	203 Rev., 335 Rev.		
Barbados Accretionary Wedge (2 legs of 4)		10	6	378 Rev.		
Bering Sea (1 leg of 1, from CEPAC-DPG)	5	m	13	CEPAC-DPG		
California Current: Neogene	8			271		
Caribbean Crust (1 leg of 1)				14	343	
Cascadia Margin (1 or 2 legs; to be a CM-DPG)		1	3	233, 237, 317		
Cayman Trough (1 leg of 1)	24.5			10	333	
Chile Triple Junction (2 legs of 2)	24.5	2	1	362 Rev.		
Deepening 801C/deep drill. M-series in W.Pac.(1 leg of 1)	9.5			11	368, 287	
East Pacific Rise: bare-rock (several legs, from EPR-DPG)	2.5	7			321, 357 Rev.	
Endeavour Ridge: hydroth. at medium-spreading ridge	12	12			325	
Endeavour Ridge: origin of large metal sulfide deposits	15				325	
Equatorial Atlantic Transform Margins (1 leg of 1)				7	313, 346 Rev.	
Florida Escarpment		m			332	
Geochemical Reference: for subduction zone	9.5				267	
Geophysical Observatories: Hawaii pilot project (< 1 leg)	8			4	377 Rev	
Gulf of California: hydrothermalism		8			275 Rev.	
Hess Deep: layer 2/3 transition and layer 3	1				375	
Juan de Fuca: evolution of near-axis seamounts	16				290	
Lithosphere Characteristics	19.5				DMP initiative	
Loihi Seamount: active young hotspot volcano	14	m			252 Rev.	
MARK area: long section of upper mantle	2.5				369	
Marquesas: temporal evolution of hotspot	23				291	
Mathematician Ridge: extinct ridge	22				352	
Mediterranean Gateways		11			323, 372	
Mediterranean Ridge		m			330	
Nankai-II		13			314	
Navy Fan		m			250	
New Jersey Margin sealevel		3	5		348	
New Zealand Margin (see also SW Pac. sea level below)			9		337	
North Atlantic: non-volcanic rifted margins (2 legs of 6)				2	334, 365, 366	
North Atlantic: volcanic rifted margins (2 legs of 4)	11			5	310,311,328,358,&363	
North Australian collisional margin (2 legs of 2)			m	8	340	
North Pacific Neogene and older		2			CEPAC-DPG	
Northernmost Atlantic paleoceanography: Arctic gateway		1			305, 336, 320	
Oceanographer FZ: long section upper mantle	21				374	
Peru: gas hydrates			6		355	
Sedimented Ridges II (2nd leg of 2)	5		4		SR-DPG	
Shatsky Rise: anoxic events		10			CEPAC-DPG	
Site 735B: layer 3-mantle transition	18				300	
Site 505: stress measurements (1 to 2 legs of 1 to 2)	19.5			12	373	
Somalia: deep stratigraphic hole		m			211	
South Atlantic eastern margin upwelling		m			339, 354	
South Atlantic western margin ocean history		m			-	
South Equatorial Atlantic Neogene		7			347	
Southwest Pacific sea level program		9			337, 338, 367	
TAG Area: high-temperature hydrothermalism	4		11		361	
Valu Fa Ridge: sulfide mineralization in arc environment	17		14		360	
Vema FZ: layer2/3 transition	7				376	
Vema FZ: long section of layer 3	13				376	
Vema FZ: layer 3-mantle transition	6				376	
West Florida Margin Sea Level		12			345	

m = mentioned for further review and possible higher ranking before April 1991

	LITHP	OHP	SGPP	TECP
1	Hess Deep (multi-leg)	Northernmost Atlantic (2? legs)	Cascadia (1 or 2 legs)	Chile TJ 2 legs
2	tie\ EPR (multi-leg)	North Pacific (1 leg)	Chile TJ (2 legs)	N Atl non-volc marg (multi-leg)
3	tie/ MARK (multi-leg)	New Jersey sea level (1 leg)	Atolls & Guyots (2 legs)	Cascadia (1 or 2 legs)
4	TAG (2 legs)	Mesozoic Guyots (1 leg)	Sed. Ridges (2 legs)	Geophys N of Oahu (part of a leg)
5	Sed Ridges (2 legs)	Bering Sea (1 leg)	New Jersey sea level (one leg)	N Atl volc marg (multi-leg)
6	Vema layer 3/mantle (multi-leg)	Marshall Atolls & G. (1 leg)	Peru Gas hydrates (part of a leg)	Barbados (2 legs)
7	Vema layer 2/3 trans. (multi-leg)	So. Equat. Atlantic Neog. (1? leg)	EPR (multi-leg)	Eq. Atl. Transforms (one leg)
8	Geophys N of Oahu (part of a leg)	California Current (1 leg)	Gulf Calif (one leg)	N Austral collision (2 legs)
9	tie\ Geochem. Ref. (one leg)	SW Pacific sea level (1 or 2 legs)	New Zealand (one leg)	Antarctic (2 legs)
10	tie/ Deepen 801C (one leg)	Shatsky Rise anoxia (part of a leg)	Barbados (multi-leg)	Cayman (one leg)
11	N Atl volcanic margins (multi-leg)	Mediterra'n Gateway (1? leg)	TAG (2 legs)	Deep Drilling M ser (one leg)
12	Endeavor hydroth'm (one leg)	West Florida Margin s.l. (1 leg)	Endeavour hydroth. (one leg)	Costa Rica stress (1 or 2 legs)
13	Vema long sect.layer 3 (multi-leg)		Nankai II (one leg)	Bering Sea (one leg)
14	Loihi (one leg)		Valu Fa arc sulfide (one leg)	Caribbean Crust (one leg)
15	Endeavor sulfide (one leg)			Atolls & Guyots (2 legs)
16	Axial Seamount (one leg)			
17	Valu Fa arc sulfide (one leg)	(plus 5 others) <i>Antarctic near Penin.</i>	(plus 6 others) <i>Bering Sea</i>	
18	SW Indian 735B (1 or 2 legs)	<i>Antarctic near Ross Sea</i> <i>Somalia deep hole</i>	<i>Florida Escarpment</i> <i>Loihi</i>	
19	tie\ Costa R. stress (1 or 2 legs)	<i>SE Atlantic Upwelling</i> <i>SW Atlantic Margin</i>	<i>Mediterranean Ridge</i> <i>Navy Fan</i>	
20	tie/ DMP charact. (multi-leg)		<i>N Austral margin</i>	
21	Oceanographer (multi-leg)			
22	Mathematician (one leg)			
23	Marquesas (one leg)			
24	tie\ Chile TJ (2 legs)			
25	tie/ Cayman (one leg)			

note:
the horizontal lines below ranks 5, 10, and 15
mark the divisions on the illustrations;
they have no other significance

Programs of interest to more than one thematic panel, Spring 1990

Chile Triple Junction

1 (TECP), 2 (SGPP) (& tie for 24: LITHP)

Cascadia

1 (SGPP), 3 (TECP)

Atolls and Guyots

3 (SGPP), 4 (and 6, OHP) (& 15, TECP)

New Jersey Sea Level

3 (OHP), 5 (SGPP)

Sedimented Ridges

4 (SGPP), 5 (LITHP)

East Pacific Rise Bare-rock

tied for 2 (LITHP), 7 (SGPP)

Geophysical Observatory Pilot Hole

4 (TECP), 8 (LITHP)

TAG Area Hydrothermal

4 (LITHP), 11 (SGPP)

North Atlantic Volcanic Rifted Margins

5 (TECP), 11 (LITHP)

Bering Sea

5 (OHP), 13 (TECP) (& mentioned by SGPP)

Barbados

6 (TECP), 10 (SGPP)

SW Pacific sea level

9 (OHP), 9 (SGPP)

Deepen 801

tie for 9 (LITHP), 11 (TECP)

Endeavor

12 (& 15, LITHP), 12 (SGPP)

N Australia Margin

8 (TECP) (& mentioned, SGPP)

Cayman

10 (TECP), tied for 24 (LITHP)

Site 505 Stress

12 (TECP), tied for 19 (LITHP)

Valu Fa

14 (SGPP), 17 (LITHP)

Loihi

14 (LITHP), (& mentioned SGPP)

Programs of interest only to one panel (through rank 10)

1. Hess Deep (LITHP), Northernmost Atlantic (OHP)

2. North Pacific (OHP), North Atlantic non-volcanic margins (TECP)

2.5 MARK area (LITHP)

6. Vema 3/M (LITHP), Peru Gas Hydrates (SGPP)

7. Vema 2/3 (LITHP), S. Equat Atl. (OHP), Equat. Atl. Transforms (TECP)

8. California Current (OHP), Gulf of California (SGPP)

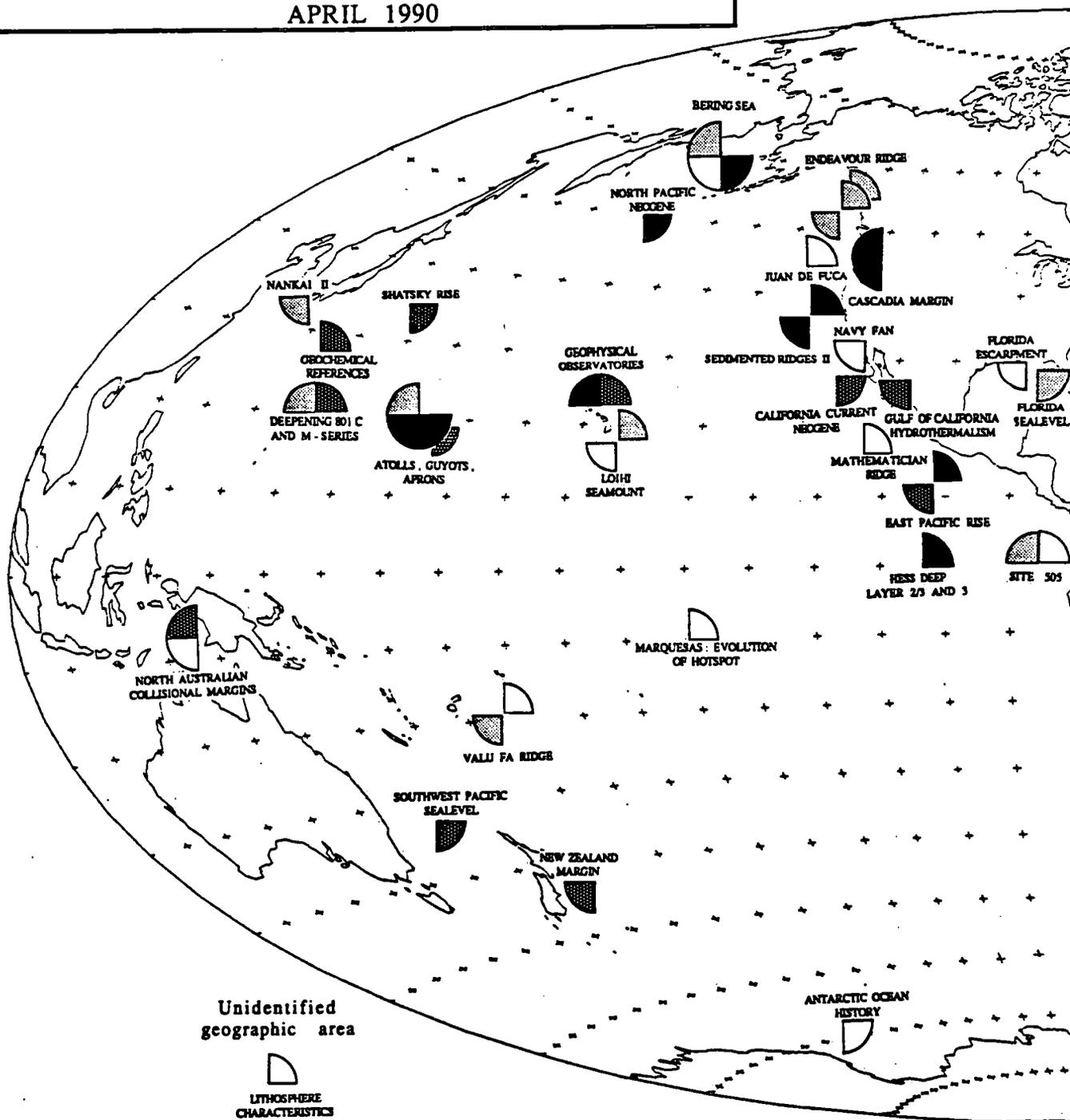
9. Antarctic (TECP)

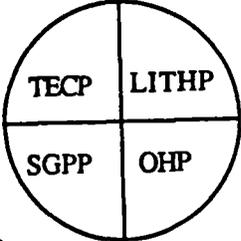
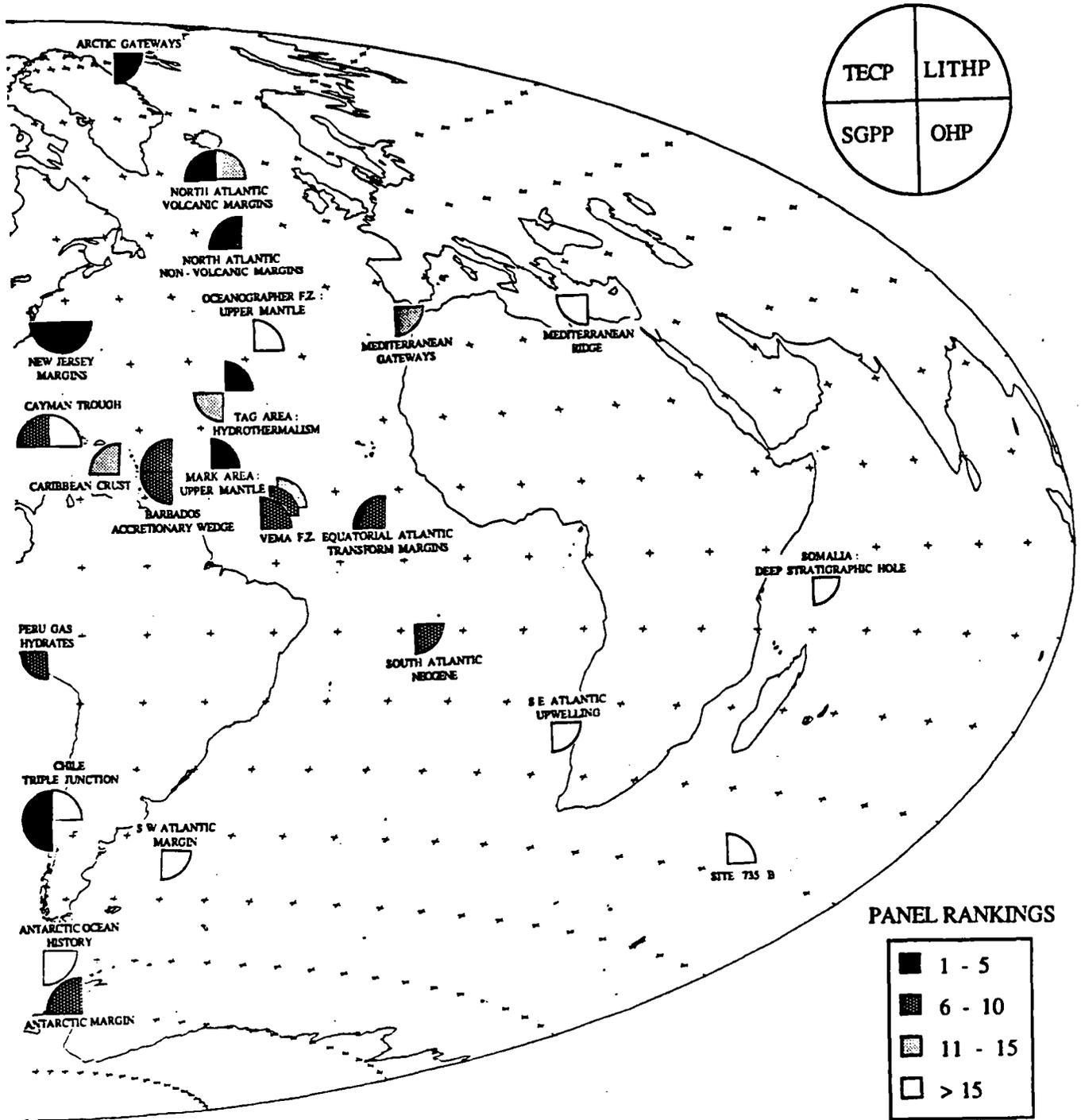
9.5. Geochemical Reference (LITHP)

10. Shatsky Rise (OHP)

LOCATION OF PROGRAMS RANKED THEMATICALLY,

APRIL 1990





PANEL RANKINGS

■	1 - 5
▒	6 - 10
▧	11 - 15
□	> 15

JOIDES PLANNING COMMITTEE ANNUAL MEETING
27-30 November 1989
Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

MINUTES

Members:

J. Austin - University of Texas at Austin
G. Brass - University of Miami
M. Cita-Sironi - University of Milano, ESF Consortium
D. Cowan - University of Washington
A. Crawford - University of Tasmania, Australia (alt. for J. Malpas)
R. Duncan - Oregon State University
H. Jenkyns - Oxford University, United Kingdom
M. Kastner - Scripps Institution of Oceanography
M. Leinen - University of Rhode Island
C. Mevel - Université Pierre et Marie Curie, France (alt. for Y. Lancelot)
R. Moberly (Chairman) - Hawaii Institute of Geophysics
A. Taira - Ocean Research Institute, Japan
B. Tucholke - Woods Hole Oceanographic Institution
U. von Rad - BGR, Federal Republic of Germany
J. Watkins - Texas A&M University
J. Weissel - Lamont-Doherty Geological Observatory (alt. for M. Langseth)

Liaisons:

L. Garrison - Science Operator (ODP-TAMU)
R. Jarrard - Wireline Logging Services (ODP-LDGO)
E. Kappel - Joint Oceanographic Institutions, Inc. (alt. for T. Pyle)
B. Malfait - National Science Foundation

Panel, Committee and DPG Chairmen:

M. Ball - Pollution Prevention & Safety Panel
R. Batiza - Lithosphere Panel
I. Dalziel - Tectonics Panel
R. Detrick - Sedimented Ridges DPG
R. Kidd - Site Survey Panel
T. Moore - Information Handling Panel
K. Moran - Shipboard Measurements Panel
D. Rea - Central & Eastern Pacific DPG
N. Shackleton - Ocean History Panel
C. Sparks - Technology & Engineering Development Committee
E. Suess - Sedimentary and Geochemical Processes Panel
P. Worthington - Downhole Measurements Panel

Guests and Observers:

J. Baker - Joint Oceanographic Institutions, Inc.
 B. Harding - ODP-TAMU Engineering
 A. Meyer - Science Operator (ODP-TAMU)
 J. Natland - Scripps Institution of Oceanography
 M. Storms - ODP-TAMU Engineering

JOIDES Planning Office:

L. d'Ozouville - Executive Assistant and Non-US Liaison
 G. Waggoner - Science Coordinator

Monday, 27 November 1989

812 Introduction

PCOM Chairman Ralph Moberly called the 1989 Annual Meeting of the JOIDES Planning Committee to order. Brian Tucholke welcomed everyone to the Woods Hole Oceanographic Institution. Tucholke explained logistics including two dinners, the first hosted by Woods Hole and the second by JOI. Moberly welcomed the alternates standing-in for this meeting, A. Crawford, C. Mevel and J. Weissel. Introductions were then made starting with the JOIDES Planning Office, PCOM members, panel chairmen, liaisons, invited guests and observers.

813 Minutes of 22-24 August 1989 Seattle PCOM Meeting

Moberly called for comments, corrections and approval of the previous minutes.

U. von Rad asked that on page 8, Bochum be corrected to Bosum.

PCOM Motion

PCOM approves the minutes of the 22-24 August 1989 Planning Committee meeting with amendments. (Motion Kastner, second Brass)

Vote: for 16; against 0; abstain 0

814 Approval of Agenda

Moberly called for additions or revisions, and then for adoption of the agenda for the meeting. Several minor additions and modifications were requested in the Agenda.

PCOM Motion

PCOM adopts the agenda for the 27-30 November 1989 Planning Committee meeting with amendments. (Motion Brass, second Leinen)

Vote: for 16; against 0; abstain 0

815 ODP Reports By Liaisons to PCOM

EXCOM

R. Moberly reported on the 3-4 October 1989 EXCOM Meeting in Amsterdam. Summaries of the principal results of importance to PCOM included:

- Conferences. PCOM's mandate calls for sponsoring and convening COSOD-type conferences at appropriate intervals. One plan had called for COSOD III in mid-1992. After discussion, EXCOM leaned toward both (a) a small series of international science-focused meetings in the summer or fall of 1991, partly retrospective ('distinguished past') and partly forward-looking ('exciting future'), with timing, venues, and organization largely decided by the country or countries for which these will be partly 'marketing exercises' for MOU renewal; and (b) COSOD III in perhaps 1993, with a focus on means of implementation of plans in the renewed program.
- Mandate changes. EXCOM accepted, and the JOI Board of Governors ratified, the changes PCOM proposed for panel membership statements and reinstatement of working groups.
- Global geoscience initiatives. EXCOM accepted the JOI proposal (which PCOM had endorsed) of formal initiatives with international advisory bodies of large global geoscience programs. There were, however, considerable reservations about the direct contact once a year between the liaison groups and PCOM, because of the possibility of short-circuiting the JOIDES advisory panel structures. That reservation also led to the proviso that PCOM and EXCOM members shall not be members of the liaison groups.
- Budget Committee. J. Austin of PCOM was appointed to BCOM.
- Data Dissemination. PCOM is to recommend to JOI any action about dissemination of ODP data, including action concerning the group that prepared the CD-ROM of DSDP data.
- Future Structure of PCOM. The PCOM resolution about non-JOI membership on PCOM was passed from EXCOM to the JOI Board of Governors. Supposedly, the BOG will decide their course of action at their late winter meeting. Letters from persons in non-JOI institutions, received in answer to the PCOM inquiry, were attached to the Agenda book and additional letters were distributed at the meeting.
- Future Structure of ODP. EXCOM will assist JOI in setting up and charging the next (third) Performance Evaluation Committee (PEC). The review is to include the broader structural aspects of the program as well as the performance of the subcontractors. EXCOM will advise JOI regarding procedures to select the post-1992 subcontractors.

- Miscellaneous. In a discussion related to performance evaluation, PCOM was cautioned that the JOIDES advisory panels must be independent; they must not become unduly influenced by organizations they are to monitor or evaluate. In a discussion of the Long Range Plan, comments were made about the Executive Summary, and the statement about a possible second vessel; JOI is to work the comments into a consensus statement. EXCOM reviewed ODP results in terms of COSOD I objectives. PCOM's motion that TAMU shall develop the capability to run the BRG's suite of logging tools at sites drilled with the DCS, led to discussion of the budgetary and time-delay implications of some of the possible methods.

Discussion

Duncan asked how the tables from the EXCOM agenda book concerning ODP results in terms of COSOD I objectives was prepared. Moberly said that the goals of the legs came from the cruise prospectus and were matched against COSOD I statements; the results came from the cruise reports. Duncan suggested that the document could be used more formally if it were prepared with the help of the Co-Chief Scientists and JOIDES panels. Kidd said that the document could be especially valuable outside the ODP community if it were prepared in a more formal manner. Moberly said that it must be remembered that the document was prepared quickly and intended only for the use of EXCOM in evaluating how well COSOD I goals had been attacked. von Rad said that there are some mistakes in the list and it needs to be checked by the Co-Chiefs and thematic panels. Cita cautioned that more subjective input might distort the picture about what has truly been accomplished. Brass was concerned that the document as it now stands should not be widely disseminated for PR purposes. Kastner said that PCOM needs to know what has not been accomplished because of technological problems. Shackleton said that the accomplishments cannot be evaluated solely on the basis of what comes off the ship; post-cruise laboratory work also needs to be taken into account. Leinen thought that it was naive to think that this document would not go beyond EXCOM, PCOM and JOIDES panels; because it is a valuable document it needs to have more input from panels before it gets wide distribution. It was the consensus of PCOM that letters go out to Co-Chief Scientists asking them to evaluate their legs in terms of COSOD I themes and if the objectives in the cruise prospectus were achieved in full, in part, or not at all. This evaluation is to take into account the results of the post-cruise science. The JOIDES Office with input from the Co-Chiefs and the thematic panels will revise this document. PCOM members should also submit any corrections that they have.

NSF

B. Malfait reported that the FY90 budget for NSF is still unknown. The Foundation is planning on a modest increase. The FY90 ODP budget has

preliminary approval at \$37.7 M, with final approval at \$38 M expected in January pending JOI resolution of some differences with TAMU. The contribution by the international partners will be \$16.5 M (\$2.75 M per partner) for FY90. The original NSF target for FY91 is \$39M. BCOM estimates are \$40M, with support for technological development a major concern. The final target will probably lie somewhere between \$39 and \$40 M.

Potential new members for ODP are being pursued. There will be a re-examination concerning Soviet participation. There is preliminary interest from the International Oceanographic Commission (IOC) about developing a consortium of developing countries. There may be more to report on this at the April PCOM meeting.

There is strong support within NSF for continuation of ODP after 1993. MOU discussions have begun with international partners with the same timetable as presented at the Seattle PCOM. The Long Range Plan will be an important document for discussions about renewal and is anticipated to be published in early 1990. Issues related to plans for the program after 1993 include: Access to additional capabilities (shallow-water and atoll drilling, additional sediment-coring capabilities, Arctic coring); Interaction with other programs; Tool and instrument development; Long term experiments and occupation of drill sites.

NSF Science Program support of ODP-related field programs for 1990 are: 1) Miller/Christie-Blick MCS survey with the *Bernier* of the US Mid-Atlantic Margin; 2) Overpeck/Arthur coring and seismic study of the Curiaco Trench using the *Thomas Washington*; 3) Delaney/Spiess study using Deep Tow and dredging of the Kane Transform using the *Melville*, possibly in early 1991; 4) Purdy/Fryer near bottom refraction experiment on the East Pacific Rise possibly in early 1991. The 1991 Field Program will accept proposals for projects in any ocean, using the PCOM 4-year plan for evaluation. Proposals are due either 1 February or 1 June 1990.

Discussion

Kastner asked about plans for the NEREIS project. Mevel distributed a circular about the NEREIS European Workshop planned for 29-30 January 1990 in Brussels. Mevel said that around 80 scientists will be participating in this workshop. von Rad said that the FRG does not foresee having funds to participate in both ODP and NEREIS.

von Rad then discussed the problems being caused for the non-US partners by the exclusion of the Soviets from ODP. He said that the letter from J. Thiede suggests that time is becoming a pressing matter, since the Soviets have the money available at this time, but may not, if the decision continues to be put off. The Europeans are concerned that they keep hearing the message that something is in the works, but nothing substantial has been done. von Rad

asked that PCOM make an endorsement for further Soviet participation in ODP. Von Rad said that other European programs are being hurt by the decision to exclude the Soviets from ODP, for example Thiede's work in the Arctic. Brass said that permission for the *Polarstern* to work in Soviet territorial seas has also been affected by this decision. The international partners are involved in this decision. von Rad and Brass volunteered to prepare a resolution for PCOM approval (see Minute 826).

Taira asked if the Koreans were being approached about participating in the International Oceanographic Commission consortium. Malfait said that it is unclear at this time how the IOC is proceeding with developing a consortium, but more information should be coming soon. Garrison said that the Koreans had expressed a strong interest in forming an East Asia Consortium to P. Rabinowitz during his visit.

JOI

E. Kappel reported that FY89 is being closed out at JOI. Approval of the full \$38M ODP budget level for FY90 has been pending resolution of questions about TAMRF administrative fees and ODP/TAMU salaries. JOI has not received an official target budget from NSF for ODP for FY91. JOI is concerned that a \$39M budget will cause problems with technological development and may not cover increases in the PPI.

The Long Range Plan is being worked on at JOI, where it is in the final editing stages. An executive summary has been completed and reviewed by EXCOM. Bids have been received from printers. Distribution is anticipated to be around February. The method of distribution is not certain, perhaps something similar to what was done for COSOD.

JOI has a formal response from Bob Ginsburg of the Global Sedimentary Geology Program agreeing to form a liaison group. Ginsburg has forwarded the names of three GSGP representatives for this liaison group. PCOM needs to nominate members for this group (see later Minute 828). T. Pyle has briefed the RIDGE Steering Committee about the liaison groups and a formal response is expected shortly. The new chairman of FDSN, Adam Dziewonski, has been briefed by Pyle and a response is expected soon. A positive response is also anticipated from the Nansen Arctic Drilling group. The Continental Science Drilling Program has not yet been sent a formal letter, but the recent ODP/CSDP high-temperature tools workshop provided an opportunity to explore ways with which to interact with them. JOI has also been talking to NSF Earth Sciences Division about their MOU with KTB, which could provide a tie in between ODP and KTB.

A RFP for Micropaleo Reference Centers has been distributed by JOI. Announcements have been sent to all ODP member countries. Deadline for

proposal submission to JOI is January 15, 1990. Money for these centers is not in the budget as it stands now.

J. Weissel is the new chairman of USSAC. The CD-ROM which was funded by USSAC has been distributed to PCOM members. A new Fellowship brochure has been prepared and copies were distributed at the meeting. USSSP has funded F. Spiess for a wireline reentry project. USSAC is supporting the upcoming Geochemical Logging Workshop of Brass and Kastner.

Discussion

Leinen asked if there had been a response from JGOFS about the liaison groups. Kappel said that Pyle has written IGBP, but there has been no response at this time.

N. Shackleton said that he is involved in the IGBP and will talk to them about responding to JOI.

Science Operator

L. Garrison reported on the Sea of Japan Legs which were completed in mid-October (Appendix A). These appear to have been successful legs, with the major objectives achieved. On Leg 127, the age and nature of the acoustic basement was determined at 3 of 4 sites. Ages for the dolerite sills cored at these sites range from 14-19 m.y. The site on the Okushiri Ridge did not reach basement because of loose sands, but, dating of the sands suggests convergence of the plates began at 1.8 m.y. At Site 794 on Leg 127, the drill pipe became stuck and could not be jarred loose. The pipe was backed off and the tools left in the hole. The cased hole into basement for subsequent experiments on Leg 128 was not achieved. Therefore, 10 days were added to Leg 128 to either fish the tools out of the hole or to drill a new hole for these experiments. Leg 128 started drilling at Site 798 on the Oki Ridge, where at a total depth of 518 m a show of gas caused drilling to be terminated for safety reasons. This site was where the third-party, ^{14}C -labelling, bacteriological experiment by scientists from the UK was planned. The cores for this experiment were transferred to another vessel chartered by the UK, transported to shore and flown to the UK. The samples appear to have arrived in good condition and the results are now being worked up. Site 799 drilled 1084 m in the failed rift in the Yamato Trough, where metallogenic deposits were expected. A sharp decrease in the C_1/C_2 ratios near the bottom of the hole and fluorescence of the fluid caused drilling to be stopped for safety reasons. The hole is good for lower Miocene paleoceanography. The experiments at Site 794 depended on a rendezvous with ORI ships, therefore the site was reoccupied. Fishing was not successful, therefore a second hole with a reentry cone offset 167 m from the first, was drilled at least 80 meters into true basement, and the hole was then cased. The OBS experiment was

successfully conducted at this site. For the electrical resistivity experiment another uncased, uncased, 400-m-deep hole was quickly drilled. This experiment also appears to have been successful.

Following Leg 128, the *Resolution* went into Pusan, Korea for a quick offloading and change of crew. The ship then transited to Singapore, where along the way they had to deal with two medical evacuations and a typhoon. The ship arrived in Singapore on time and the dry-dock was carried out. During the transit from Singapore to Guam the ship encountered another typhoon through the center of which it safely passed. While at anchor in Guam, new drill pipe was made up. The ship departed Guam one day early on November 22 and that extra day has been added to Leg 129.

At the last meeting of PPSP, several of the sites for Leg 129 were left unreviewed since new data for these sites was forthcoming. PPSP has given latitude to drill along any of the seismic tracks (Appendix A), since no safety problems are anticipated in 6000 m of water and 300-400 m of sediments. Leg 129 is underway and has begun drilling at PIG-1.

Current plans for drilling on Leg 130 are to drill the holes in the order OJP-4, OJP-3, OJP-2, OJP-1 and OJP-5, with 10 meters of basement penetration at OJP-4 and 50 meters of basement penetration at OJP-5 (Appendix A). This will allow some work to begin on basement samples early in the cruise without endangering the Neogene Transect.

There have been no changes for Leg 131. At the last PCOM meeting there was a discussion about running the wireline packer in perforated casing. Further consideration has shown this to be useless for getting samples of fluids for scientific purposes. The sole purpose of this test will be to check the operation of the wireline packer. There will be two other packers available for running outside of the pipe. The Geoprops probe will probably not be ready. The Navi-drill can be used to make a hole for probes in advance of the drill bit.

L. Garrison distributed an updated operations schedule (Appendix A). Engineering Leg 132 has had 4 days added so that it is now 59 days. The transit from Guam to Port Moresby has been eliminated and has the effect of increasing Leg 133 by 6 days, but saving transit time. The length of Leg 134 remains unchanged, but the port dates are advanced one day. The port for the end of Leg 135 is probably Papeete.

Personnel changes at ODP-TAMU include the move of Sylvia DeVoge to the UK and her replacement as Administrator by Rick McPherson. Ray Silk has retired as chief production editor and his experience will be missed. Ray has served DSDP and ODP for 17 years.

B. Harding reported on the drydocking of the *Resolution*. Both the SEDCO projects and the ODP-TAMU projects went well and was within the budget.

The ship was one day late going off the blocks and back into the water, but did not effect the overall schedule. The underway geophysics lab was rearranged and modified; it had the floor raised and more space was made available by rearranging the racks. It got a separate air conditioning system to compensate for being over the engine room. The sonar dome was removed and the 12 separate 3.5 kHz transducers were replaced by a single 3.5 kHz transducer. A motor-generator set for standby power was added to provide more reliable, regulated power. New lab furniture was added to the lab deck. New counter tops and stainless steel coving were put into the core splitting room. A new air conditioning unit was put in the computer-user room which also freed up a little space. The floors on the lab deck were regraded to provide better drainage. A new rub-rail was put on the moon pool for better protection for the TV cable. A new doppler sonar unit was installed. The Lamont BRG removed the Schlumberger CSU unit and overhauled it, and rearranged racks in the downhole measurements lab. The hull was found to be in good shape and clean. Some hull plates were replaced in the starboard aft thruster well. This was only the second drydock for the vessel. The rules provide for a dry dock every 4 years unless there is an underwater inspection. The next drydock will probably come up in 1994.

A. Meyer reported on staffing and publications. The science staffing is almost complete through the NE Australia Leg 133. Two scientists are needed on the Engineering Leg 132. Five scientists are needed on NE Australia Leg 133 and ODP-TAMU is looking to the non-US partners to fill these slots. Legs 134 and 135 should be staffed by Christmas. Meyer discussed the shipboard participant tally for Legs 101 to 128 (Appendix A). Prospectuses have been published for Legs 129, 130, 131 and 132 plus an addendum to Leg 129 based on the results of the *Suroit* cruise. Sites for NE Australia Leg 133 will be reviewed at the February meeting of PPSP and the Co-Chief pre-cruise meeting will be in early March. The pre-cruise meetings for the Vanuatu and Lau Legs will also happen prior to the next PCOM meeting and if there are to be liaisons to these three meetings they should be appointed now. There is a new staff scientist, John Firth a nannofossil paleontologist, who will be sailing on the Nankai Leg. A vacant staff scientist position will be advertised in January.

Publications were discussed next. Currently there are two post-cruise meetings, an initial meeting and the scientific meeting. Legs 125 and 126 have had their initial meetings and Legs 127 and 128 have scheduled initial meetings in January 1990. Normally 6 people have been attending these meetings which are about 4 months after the cruise. The scientific post-cruise meeting at about 12 months are being requested for venues other than College Station: Leg 125 in Menlo Park; Leg 126 in Hawaii; Legs 127 and 128 jointly in Japan. In some cases field trips are being requested to be held along with the meeting. E. Kappel said that JOI has budgeted assuming the meetings are held in College Station. JOI is willing to try the system of meeting elsewhere but the expenses have to stay within the budget. The

policy on field trips is the same as for PCOM and other JOIDES meetings, it is permissible to hold them, but USSAC cannot pay for them. USSAC will consider this question further at their January meeting.

Meyer showed the scheduled distribution dates for publications of Initial Reports and Scientific Results (Appendix A). Publication of the Part A Initial Reports volumes 12-13 months after the cruise should be accomplished next year. An experiment is being tried on Leg 129 by sailing an illustrator on the cruise to help draft the barrel sheets onboard. It is anticipated that the barrel sheets and some illustrations will be finished when they come off the ship. The editorial review boards and the overall review process results in less control over speeding up publication of the "Scientific Results" volumes. The goal is to have the publication of these volumes at 38-40 months post-cruise sometime soon and to approach the 30-32 month goal in the next few years.

Discussion

Kastner wanted to know what is being done about automation of the barrel sheet preparation. Meyer said that ODP is rethinking what the barrel sheets are supposed to accomplish. Use of computers to speed up the process are also being worked on and TAMU suggestions will be reviewed by SMP and IHP. Moore complimented Meyer/ODP/SMP for their quick action to help speed up publications. Moore asked how the possible addition of another partner and additional persons such as the illustrator would effect the number of berths available. Meyer said this is a complex problem, it not only effects the number of bunks needed but also how to manage the large number of persons onboard. This issue may require changes in the staffing policies. Weissel asked about the change in the number of applications by persons from non-JOI institutions. Meyer said that there appears to be a general increase in the number of applications from persons from non-JOI institutions since Leg 118. Moore commented that there is often a remarkable naivete by some shipboard scientists about marine geology and sedimentation. He suggested that a short course be offered before a leg for shipboard participants. Brass said that this should be done just after leaving port. Cowan suggested that there is no better short course than participation with the science done onboard the vessel. Kastner said that it is the responsibility of the Co-Chiefs to present the goals of the cruise at the start. Mevel asked about participation by graduate students. Meyer said that the average has been about 20% of the shipboard science party being graduate students close to finishing their degrees.

Wireline Logging Services

R. Jarrard presented the Wireline Logging Services report for the Lamont Borehole Research Group. He distributed a prospectus for Downhole Measurements for Year 1 of CEPAC. He discussed logging results from Legs

127 and 128 in the Japan Sea (Appendix B). The generally poor hole conditions on Leg 127 caused problems for logging. The SES was used at only one site on Leg 127 because of the danger of losing the BHA. The new SES design would have allowed more deployments of logging tools. On Leg 128, better hole conditions were encountered and multiple strings of tools could be deployed. The FMS was used in 7 of 9 logged holes and is proving to be a popular logging tool. At site 799B the FMS records reveal cumulate layering in basalts. The FMS has also proved useful in soft sediments for correlations between cores and estimating core recovery. Third-party downhole experiments were successfully carried out as part of Leg 128. Logging has been useful in defining diagenetic features such as dolomite stringers and the opal A/opal CT and opal CT/quartz transitions as well as indicating sediment interbeds between basalt flows and sills. Current plans are to use the geochemical logs and XRF data on cores from Site 798 to do a further evaluation of geochemical logging techniques after improvements such as the introduction of the boron sleeve. The geochemical logs can be used to establish a 41,000-year periodicity and with reprocessing may show a 23,000-year periodicity.

Discussion

Shackleton wanted to know if FMS can be used in real time to evaluate time series studies and core recovery rates during drilling. Jarrard said that the raw data from the FMS can be used to evaluate core recovery with the HPC, but since logging is done after drilling is completed, the FMS data is not usually available during the actual drilling. The processing of the logging data for time series work is too time consuming to be done onboard the vessel.

von Rad commented that Bosum has been funded to develop a gyro-oriented, three axis magnetometer for vertical magnetic field susceptibility measurements in a borehole. This tool could be used for 504B, Chile Triple Junction or Sedimented Ridges. Jarrard said that this is good news for the logging program since the magnetometer that the BRG uses is not gyro-oriented and was going to be removed from use since there are no back-up parts.

816 Annual Reports By Service Panels

DMP

P. Worthington presented the annual report for the Downhole Measurements Panel. During 1988, DMP worked towards the goal of making the ODP community aware of the scientific benefits of logging. During 1989, DMP focussed on improving the quality of logging data. During 1990, DMP will continue with efforts to improve data quality; will propose a downhole measurements program to characterize oceanic lithosphere; work towards high-temperature (slimhole) technology; and contribute to the overall profile

of ODP. DMP would like to see FMS data available on board ship at the earliest possible time, since FMS images are important for orienting and positioning cores and indicating gaps in recovery. The feasibility of processing FMS images while on board needs to be established.

DMP is concerned about the fast-approaching need for high-temperature slimhole logging tools in mid-1991. DMP thinks that the highest priority logging measurements established by LITHP should be divided between the BRG at Lamont (temperature, borehole fluid resistivity, formation resistivity, natural gamma, and sonic) and TAMU (permeability, pore pressure, pore fluid sampling). DMP suggests a short-term strategy of repackaging existing tools, but there are anticipated problems because of the 4-inch hole diameter and problems cooling tools at 350-400°C in small holes. DMP recommends that tests be conducted on the upcoming Engineering II Leg to see what kinds of problems will be encountered for logging tools in the 4-inch diameter hole. DMP recommends the immediate commitment of funds to solving these problems.

Discussion

Suess asked if DMP would include the use of downhole fluid tracers as part of their proposed downhole measurements program to characterize oceanic lithosphere. Worthington said that this could be included, but DMP was mainly concerned with establishing the representability of crust at one location. Brass asked what was being done by ODP to tie in core samples to logging measurements. Worthington said that very little is being done with cross-scale tie-in from cores and logs. Brass asked if DMP had any suggestions for initiating these kinds of studies. Worthington said that the physical separation of the ODP repositories for cores and logs makes this sort of study difficult. Kastner suggested that DMP also have joint meetings with SGPP and OHP.

IHP

T. Moore presented the annual report for the Information Handling Panel. IHP deals with many tasks, although publications has received most of their attention over the past year. Other areas that have been dealt with by IHP include: cuts in funds for the Repository have slowed sample distribution; IHP has recommended that the Software Development group add a shipboard systems manager; IHP has commended the Data Base Group for their efforts in keeping the data base updated but are concerned with the amount of work needed to enter the visual core description and that some of the quantitative data appearing in the "Scientific Results" volumes does not get put in the data base; IHP recommends that the ODP Data Base be placed on CD-ROM with the help of the expertise at NGDC.

During the past year IHP, conducted a survey of ODP participants and panel members concerning publications and forwarded the results to PCOM. IHP recommends several changes to the publications policy approved by PCOM; namely clearly spelling out the duties of the authors in regards to informing editors of outside journals how their manuscripts are being treated within the ODP system, and in obtaining proper waivers of copyrights or permissions to publish as reprints in the "Scientific Results" volumes. IHP recommended wording for the ODP Publications Policy is given in Appendix C.

Moore presented the proposed publication schedules for "Initial Reports" and "Scientific Results" volumes (Appendix C). ODP is striving to achieve the mandated target of 12 months post-cruise for the "Initial Reports" volumes and 30 months post-cruise for the "Scientific Results" volumes. For the "Scientific Results" volumes this means that the scientific research and writing of the results must be accomplished within 18 months and may result in a reduction in the amount of research included in these volumes. The tightening of the schedule should result in publication of "Scientific Results" volumes 33-36 months post-cruise by FY93. The loss of critical manuscripts to the "Scientific Results" volumes due to late submission has incurred the wrath of some Co-Chief Scientists.

IHP has made some recommendations to help speed publications: 1) Get samples to investigators as quickly as possible by shipping cores at the end of every leg (Cost ~ \$60K); 2) Make editorial decisions as rapidly as possible by enhancing ODP publications staff and returning the function of editorial management of the "Scientific Results" volumes to ODP management (Cost ~\$180K); 3) Enhance the drafting staff at ODP-TAMU for drafting barrel sheets in time for 12 month post-cruise production of the "Initial Reports" volumes (Cost ~ \$24K). If editorial control is returned to ODP-TAMU, IHP recommends that the Editorial Review Boards have their responsibilities reduced to that of reviewing reviews (i.e. decide on accepting or rejecting) and possibly reviewing synthesis papers.

Discussion

Brass was concerned that DSDP post-cruise data and data from publications outside of ODP was not put into the data base or on the CD-ROM. Brass suggested that a survey needs to be made about what data should be included and a recommendation to include these data needs to be made by PCOM. Moore said that IHP felt that this was not an ODP problem. Brass said that it is important to preserve these data in a useable way. Shackleton asked if the data in tables in manuscripts submitted on computer disks could be read directly into the data base. Meyer said that this is done when possible, but not all authors are submitting their data in this manner. Moberly suggested that the panel chairmen be approached about what post-cruise data should be included and that this matter be placed on the agenda for the next panel

chairmen meeting. Moore said that IHP will be making some further recommendations. The matter was tabled until IHP does more work on this.

Since the size of the present ODP data base is close to filling up a CD-ROM, PCOM discussed the initiative to place the ODP data on a CD-ROM while NGDC still has the group that developed the software for producing the DSDP CD-ROM. The cost was estimated to be approximately \$50-80K.

PCOM Motion

PCOM forwards a favorable response to JOI to continue with the development of a CD-ROM containing the ODP data base. (Motion Brass, second Leinen)

Vote: for 16; against 0; abstain 0

PCOM thanks JOI and in particular Ellen Kappel for their efforts towards making the DSDP data available on CD-ROM.

PCOM approved by acclamation the resolution of IHP thanking Ray Silk for his efforts on behalf of ODP.

PCOM discussed the response to the new publication policy. The problems associated with parallel submission of similar papers close to the deadline was a concern. Moore said that it is the responsibility of the authors of these papers to make it clear that the paper is going to be published in ODP, and to not do anything underhanded. Leinen said that the present policy does what PCOM intended, it gets the results published outside of ODP more quickly and speeds up publication of the ODP volumes. Kastner questioned the scientific benefits of publications within 30 months as opposed to 36 months. Brass said that the intention was to get things out quicker and 30 months seems a reasonable time to aim for publication of results. von Rad said that the synthesis papers are very important to these volumes, but the Co-Chiefs have many responsibilities and get only 3 months to write the synthesis. Some flexibility is needed to ensure that the syntheses get included, possibly allowing submission during the paste-up stage. Meyer said that the pagination of the volumes cannot be delayed beyond a certain point without stopping publication. These concerns led to the motion shown below. During the discussion about the motion these points were made. Tucholke said that all of this was discussed in Oslo and there are no new arguments made that should cause PCOM to relax the publications schedule adopted. Watkins also endorsed the 30 month post-cruise publication schedule as a goal, but said TAMU needs to be given some leeway to make the process work. PCOM should avoid micromanagement. Cowan said that the shipboard participants need to face up to their responsibilities and submit their manuscripts within 16 to 18 months as required in the present schedule.

PCOM Motion

PCOM will keep the time-frame previously approved for the "Initial Reports" volumes, but move the post-cruise scientific meeting to 14-16 months and endorse publication of the "Scientific Results" volumes within 36 months post-cruise. (Motion Kastner, second Mevel)

Vote: for 3; against 13; abstain 0 (Failed)

PPSP

M. Ball presented the annual report for the Pollution Prevention and Safety Panel. During 1989 PPSP reviewed proposed sites for: Legs 127 and 128 in the Sea of Japan; Leg 129, Old Pacific Crust; Leg 130, Ontong Java Plateau; and Leg 131, Nankai Trough. 25 drill sites were approved of which 5 were moved to avoid structurally high positions. During 1989, PPSP reviewed all oil shows and source rocks encountered in DSDP and ODP drilling. The oil show in cap rock recovered off Challenger Knoll, a salt dome on the floor of the Sigsbee Deep in the central Gulf of Mexico, was mature migrated oil and slightly degraded. This discovery of oil at site 2 of DSDP drilling was instrumental in the establishment of the JOIDES-PPSP. Other oil occurrences were typically anomalous. The show in the Gulf of California was related to occurrence of an igneous sill that provided a local, rapidly activated, contact heat source and hydrothermal cell. The shows encountered in the Tyrrhenian Basin resulted from that region's anomalously high heat flow on the organic-rich sediments of that region. The hydrocarbons encountered at site 535 in the eastern Gulf of Mexico-Western Florida Straits consisted of rich but immature potential source rocks in basinal carbonate slope deposits with degraded mature tar in fractures and undegraded mature oil stains in carbonate sands. This oil probably migrated laterally, up to 100 km, in a fractured zone extending out of the deep Gulf of Mexico basin. Some reported oil shows (site 627 north of Little Bahama Bank) could not be confirmed, perhaps because of failure to seal and freeze the sediments bearing the light, volatile oil.

Clathrates are being studied in the context of the presence of a bottom simulating reflection in the vicinity of the Nankai drill sites and the Vancouver accretionary prism. PPSP's official interest in this subject stems from the safety limitation the presence of clathrates imposes on ODP drilling below the clathrate zone for other scientific objectives. PPSP has agreed to review proposals for drilling clathrates but has no commitment to approve such proposals.

A critique of Exmouth Plateau drilling was done. It was concluded that advice from PPSP played an important role in the safe and successful drilling of Sites 762 and 763 adjacent to commercial wells. Some members, however, expressed misgivings about drilling in known hydrocarbon-generating and producing provinces. PPSP will compile these summaries to provide a guide for future decisions about drilling in similar situations.

SMP

K. Moran presented the annual report for the Shipboard Measurements Panel. During this first year of SMP's existence, the panel has been concerned with: making modifications to current practices, with 70% of the recommendations pertaining to TAMU; suggesting upgrades for the Underway Geophysics and Physical Properties laboratories; integrating sample and downhole measurements (joint with DMP); requests concerning guidelines for use of radioisotopes and special measurements of fluids; specifications for such new technologies as the Pressure Core Barrel sample handler and digital color scanner. SMP recommended improvements in underway geophysics include data acquisition (borrow LDGO high-speed streamer), data processing, real-time navigation, and VSP. SMP recommended improvements in the Physical Properties Lab include a standard-methods document, and a workshop of physical properties scientists. SMP is examining suggested improvements in the Sedimentology-Visual Core Description Lab including upgrades to barrel sheets, digital color scanner, and a bench-top XRD.

The Physical Properties working group within SMP has recommended that for each parameter measured downhole, there should be a corresponding laboratory measurement. SMP will be preparing a technology document on available instruments to meet this goal, and after a joint meeting with DMP next fall, a report will be prepared. Since the request by PCOM that SMP establish guidelines for the use of radioisotopes onboard the *Resolution*, SMP has been examining concerns related to: contamination of laboratories; safety; cost vs. scientific benefit; space for vans. SMP has concluded that even with guidelines, it will be very difficult to maintain isolated areas in routine practice. SMP will be preparing guidelines based on: status of the ship's "cleanliness"; thematic panel input about requirements for their use; results of the UK biological experiment conducted on Leg 128; and UNOLS and member-country guidelines.

SMP has made some specific recommendations for purchase of equipment for the Paleomagnetism Lab (\$20K), Petrology Lab (\$10-13K), Geochemistry (non-plastic squeezers - titanium), and is evaluating the color scanner, XRD and additional physical properties measurements.

Discussion

Brass wanted to know why SMP is looking at improving underway geophysics since this has not been given a high-priority by PCOM. Moran said that SMP thinks it is negligent of ODP to not collect data while transiting vast areas of the ocean that are not well covered. The cost associated with improving the ability of the vessel to collect this data is negligible.

Brass commented that UNOLS Operation SWAB can check the vessel for radioisotope contamination. Suess said that SGPP will be considering the scientific uses of enriched stable and radioisotope tracers on the *Resolution* at their next meeting. Garrison said that policies must also be established for any third-party radioisotope experiments concerning who pays for the vans as well as costs associated with checking and decontaminating the vessel. Brass and Kastner also said that this question will be considered at their workshop. Moberly asked that a report be prepared as quickly as possible.

Brass wanted to know why a bench-top XRD was being considered, when there is a good XRD already onboard. Moran said that a more convenient bench-top XRD will provide quantitative data more rapidly than the model now available onboard. Shackleton asked what recommendations had been made concerning the micropaleontology reference collection. Moran said that SMP had recommended that this collection be put back together. von Rad suggested that whole-core radiography would be a useful and not very expensive tool onboard.

SSP

R. Kidd presented the annual report for the Site Survey Panel. SSP provides advice on the adequacy of site-survey data so that there is flexibility to change drilling sites due to different contingencies. SSP also provides advice on the adequacy of data used in the packages that the Data Bank sends to PPSP for safety evaluations.

SSP held two meetings during 1989 at which WPAC and CEPAC programs were evaluated. SSP is concerned that the Old Pacific Leg was scheduled without having all the necessary site survey data available. At the last SSP meeting in Hannover, Old Pacific was reviewed but still did not have the new MCS data processed. Final sites were going to be chosen while the leg was underway. Some important questions about the windows through the cherts and basalt sills were left unresolved. Insertions of sites for both the Nankai and Ontong Java Plateau legs were also somewhat out of order since they went to PPSP before SSP. There is a need to have longer lead times before drilling if SSP is to do its job. Looking towards future legs; SSP has approved sites for E. Equatorial Pacific, Sedimented Ridges and Lower Crust at 504B. For the upcoming meeting at Menlo Park, the attendance of proponents and additional data has been requested for the Oregon and Vancouver parts of Cascadia Accretionary Prism, Atolls and Guyots, N. Pacific Neogene, and Hawaii Flexure. Reviews for Chile Triple Junction and EPR Bare Rock are anticipated for the meeting at Menlo Park.

In order to provide proper advice, SSP needs to know the prioritization of the thematic panels (*i.e.* send copies of the minutes directly to Kidd). SSP is also supposed to look at only those proposals that are "favored" by PCOM, which is not always clearly defined. Other SSP concerns are: proper lead times for

MCS data processing, data package preparation, and detailed near-site survey data; real-time navigation and underway geophysics on the *JOIDES Resolution*; recent lack of a TAMU liaison to SSP; and lack of a post-drilling review to comment on the adequacy of site survey packages to help improve performance. SSP also requests that thematic panel prioritizations take into account the readiness of the program (e.g. site surveys, drilling technologies, downhole measurements). From a SSP perspective, legs from the WESPAC prospectus are more ready than many now under consideration for drilling.

Discussion

Austin asked about the adequacy of the data package for the Oregon portion of the proposed Cascadia Accretionary Prism drilling. Kidd said it was mainly a problem of presentation of the near-site data. Suess said that it may not be practical to have thematic panels rank their themes in terms of "readiness". Shackleton disagreed and thought it would be possible.

TEDCOM

C. Sparks presented the annual report for the Technology and Engineering Development Committee. TEDCOM sees itself as being a consultative committee that has a different triangular relationship between TAMU and PCOM. TEDCOM has suggested an additional change in mandate to define its role better from the committee's viewpoint. TEDCOM helped initiate the Engineering Leg trial of the DCS, but had only 1 member onboard the *Resolution* during these tests. On the next Engineering Leg TEDCOM would like to have 2-3 members on the ship. A major drawback of the present system configuration is the time required to remove the platform before tripping the drill string. TEDCOM has recommended that for the next test: 1) Immobilization of the lower end of the API string during all phases of DCS operation; 2) Water depth should be close to 1500 meters to minimize any vibrational problems; 3) Form a subcommittee to advise TAMU on mining drilling; 4) Ask A. Skinner of B.G.S. to be a consultant to the subcommittee on mining drilling from vessels.

TEDCOM also recommends : that the timing of Engineering Legs should suit the engineering developments and not the drilling schedule; superlegs are not suitable; cleaning of the junk in 504B should not be combined with an engineering development leg; the DCS should undergo supplementary land tests; high temperature drilling research should not be duplicated by TAMU since it is being pursued at Sandia and Los Alamos; a workshop on high temperature slimhole logging; increases in the budget for engineering development to take place.

TEDCOM examined the Long-Range Plan in terms of the technological developments that are required. Some problems are under study at present including: chert-chalk sequences; improved core recovery, increased bit life,

and pore-water sampling and pressure core sampler. TEDCOM notes that two important problems are not being addressed: orientation of all core samples; and vibracoring in sandy sequences. Hole stability in difficult drilling terranes is not likely to improve significantly. Very deep drilling of Phase 1 and 2 objectives are realistic but depend on manpower commitment and budget increases. Phase 3 objectives including a MOHO objective may not be realistic and TEDCOM recommends the organization of an International Symposium to address these concerns. Deep drilling with circulation and safety control may be possible if the DCS can be transformed into a mini-riser system.

Discussion

Weissel asked if ODP will be able to do a better job of drilling at the EPR than was done at the MARK area in the Atlantic. Harding said that the DCS should improve the ability to drill there. Storms said that at the MAR the problem was in part due to bigger hole size and the need to change drilling bits. The plan is now to leave the BHA in place and continue drilling with the DCS.

817 Annual Meeting of the Panel Chairmen

T. Moore presented the recommendations that came out of the meeting of the panel chairmen on 26 November 1989 (Appendix D). The panel chairmen recommend that their meeting no longer be held on Sunday of the weekend of the Thanksgiving holiday but rather be changed to Tuesday of the week following Thanksgiving, so that travel would not generally have to begin until the Monday following this holiday weekend. This will necessitate the moving of the start of the Annual PCOM meeting to Wednesday and continuing through Saturday. This schedule will still allow individuals to attend the Fall AGU meeting held during the week following the Annual Meeting. PCOM approved this change in scheduling for the Annual Meeting.

There is a need for groups to do both long-range planning and detailed planning for drilling programs in addition to the thematic panels. The role of Working Groups is seen as providing long-range, broader scale planning, addressing specific thematic problems for which the thematic panels do not have the time or the necessary expertise to accomplish. This planning includes determining both the objectives of drilling a particular high-ranked theme and the criteria that must be met to address this theme successfully by drilling. Working groups can also be constituted to evaluate a theme that cross-cuts the interests of multiple thematic panels (e.g. Sealevel change) as well as problems that concern both the thematic panels and service panels. It was deemed appropriate that drilling proponents serve on these working groups since they are often experts on the themes being examined and the main job of the group is to set the criteria for successfully addressing the theme. These groups may also need to evaluate which area best meets the

criteria established. This does result in a conflict with having proponents on working groups, but, such conflicts were not perceived to be a great problem as long as a significant number of non-proponents are included and the selection criteria are objectively established. Conflicts of interest must be weighed against the loss of the proponent's expertise if they are excluded. An alternative, and probably unsatisfactory solution, would be to have the thematic panels or PCOM select the best area for addressing the theme.

Detailed Planning Groups do the more focussed planning concerned with selection of sites for a particular drilling program. These groups may be constituted from the working group with addition of proponents, if not already included, and others whose expertise is desired. The Sedimented Ridges Detailed Planning Group was suggested as a model for such groups, since it was originally constituted (more or less) as a working group to establish the criteria and then evolved into a detailed planning group to plan the drilling.

The panel Chairmen emphasized the point that a 4-year general plan is needed to keep the system functioning and this is on the shoulders of PCOM to put together. Some drilling themes in the Long-Range Plan require that there be advanced planning of technological developments to ensure that the necessary engineering developments are ready when needed, TEDCOM needs to continue its role advising TAMU about these developments but with additional direct input from the thematic panels. A working group may be needed to provide advice on this matter.

Problems arising from the new ODP Publications Policy were discussed. Options for handling papers that are not of sufficient quality or submitted too late for inclusion in volumes were recommended, these include publication as data-only papers, inclusion as appendices in later volumes, and outside publication of synthesis papers. The accommodation of the required scientific sampling of cores to carry out the objectives of a drilling leg within the framework of the present sampling policies was discussed; it was recommended that these requirements be specified in the prospectus for the leg and that IHP can then accommodate these requirements.

Inter-panel liaison is important for communication between panels and should be continued. Joint, back-to-back, and overlapping meetings also facilitate interpanel communications. Drilling proposal reviews are adequate and do not need to be sent out for review outside of JOIDES. Proposals under active consideration for drilling should be available to anyone who requests them. The representation on PCOM and EXCOM of non-JOIDES US Institutes is unnecessary. There is an important need for disciplinary balance on PCOM.

Discussion

Brass was concerned that since the prospectus of a leg comes out relatively late, IHP might not have a chance to move on any special sampling requirements before a leg is drilled. Kidd suggested that in these cases the decision could be made by the chairman of IHP. It was also suggested that a request could be made just after the pre-cruise meeting. Kastner was concerned that the current sampling procedures were established many years ago during DSDP, while now ODP is doing different kinds of science. Perhaps a new policy is needed which will take into account these changes.

Tucholke suggested that the recent Workshop on Sealevel Change may fulfil the need for a working group on sealevel. Watkins said the report for this meeting will be published soon.

Austin asked if the panel chairmen thought there was an adequate flow of proposals for highly ranked themes or do the panels need to write their own proposals for some themes. Suess said that for SGPP there are many good proposals per theme, the challenge is to concentrate them to get the best. The response of the community has been strong. Dalziel said that TECP has a spectrum from many proposals per theme to no proposals for important themes. Batiza said that in general LITHP is in the same situation as SGPP and has adequate proposals for important themes. Shackleton said that OHP has a more than adequate flow of proposals, but there are a few instances where stronger proposals are needed.

Tuesday, 28 November 1989

818 Annual Reports By Thematic Panels

LITHP

R. Batiza presented the annual report of the Lithosphere Panel. Important events during 1989 for LITHP included: 1) Approval by PCOM and EXCOM of the ODP Long-Range Plan which spells out a staged, long-term strategy for understanding the origin and evolution of ocean crust and lithosphere; 2) The JOI-USSAC sponsored workshop on drilling the oceanic lower crust and mantle which provided a detailed and logical approach for implementing the deep crustal and mantle phased drilling plan; 3) LITHP reaffirmed its commitment to the following themes for scientific drilling: penetration of normal oceanic crust into mantle; establishing oceanfloor seismic and ridge-crest observatories; investigation of magmatic and hydrothermal processes of crustal accretion at a variety of spreading rates; improved understanding of off-axis volcanism.

LITHP is concerned that implementation of the ODP Long-Range Plan will require detailed planning to ensure that engineering capabilities are brought

on-line in a timely fashion. LITHP suggests that a Deep Drilling Detailed Planning Group is needed to help identify and prioritize the engineering developments that will be needed. The Deep Drilling DPG will also assess deep crustal drilling proposals in the Atlantic and Pacific, set guidelines, and formulate a drilling program. LITHP also recommends that a DPG for the East Pacific Rise Bare Rock Drilling be formed and meet as soon as possible.

LITHP feels that a better disciplinary balance on PCOM is important for promoting the best possible scientific drilling decisions. This will in part help to prevent problems such as that which occurred with Geochemical Reference Sites. LITHP will continue to support drilling at Geochemical Reference Sites, and views this program as very important for the thematic integration of drilling in the Western Pacific (e.g. Legs 125 & 126). LITHP urges that the basement objectives on Leg 130 (Ontong Java Plateau) be assigned a high priority for drilling. Continued erosion of these objectives jeopardizes the overall success of multi-objective drilling programs which OJP represents.

Logging of high-temperature holes and/or slim DCS holes is essential for the scientific success of many LITHP drilling programs in CEPAC and beyond. The following prioritized list of logging capabilities was established by LITHP after its joint meeting with DMP on September 11, 1989:

1. Temperature (0°-400°C; 1-2° error)
2. Fluid Resistivity (6% sensitivity; ≤ 5% error)
3. Formation Resistivity (to 1%; standard values)
4. Natural Gamma
5. Sonic
6. Caliper
7. Flow-rate (spinner)
8. Pressure in well-bore

Of the above measurements, temperature is the most essential. Other desirable measurements (not in priority order) are:

Ca²⁺, pH, resistivity and temperature on wireline packer
 Permeability
 Fluid Sampling
 Porosity
 V_P, V_S
 Televiewer
 Seismic Anisotropy
 Full VSP
 Magnetic Susceptibility and Intensity
 H₂S Detector

For the eventual success of global seismic arrays, LITHP urges that more re-entry cones be routinely deployed by ODP.

LITHP rankings of the 6 CEPAC programs under consideration for FY91 drilling are: 1) Lower Crust at 504B; 2) Sedimented Ridges; 3) EPR Bare Rock; 4) Chile Triple Junction, 5) Cascadia Margin; 6) East Pacific Neogene.

Discussion

Brass and Sparks asked about the composition of the Deep Drilling DPG. Batiza said that the membership would come largely from TEDCOM, LITHP, TECP, SGPP and possibly from the community outside of ODP with interests in deep drilling. Moberly suggested that at the next TEDCOM meeting, the issues concerning planning for deep drilling be placed on the agenda and that the thematic panels with interests in deep drilling send a representative. TEDCOM will then make recommendations about formation of a group to deal with these problems. Kidd suggested that a working group might be more appropriate than a DPG. Natland asked who would be deciding the best location to implement a drilling program to the mantle. Batiza said that this would be the job of a DPG.

OHP

N. Shackleton presented the first annual report for the Ocean History Panel. For the most part OHP approved the mandate for the new panel with only minor suggestions for improvement. The only item of concern is Sealevel. This major scientific problem is at present the responsibility of both OHP and SGPP and receives fragmented attention. The OHP portion of the SOHP White Paper was written in anticipation of the splitting of the panel and OHP regards this White Paper as valid for present purposes. During 1989, OHP reviewed about 25 new proposals that have some significant OHP interest.

At the next OHP meeting, at least 15 proposals will be prioritized in order to assist PCOM in developing a 4-year tentative route for the *Resolution*. It is anticipated that several Pacific proposals previously highly ranked by the former SOHP panel will remain very high on the OHP list. Both the Bering Sea and the Norwegian Sea are areas that must be drilled to help focus future Arctic work. Within the high-priority Neogene theme, the Eastern Equatorial Pacific Neogene Transect is an exceptionally good program and OHP unanimously recommends its inclusion in the FY91 drilling.

The purpose of Neogene (High Resolution) Paleooceanography is to understand how the present surface and deep circulation (and its variability in response to Milankovich forcing) have evolved as a result of changes in the external boundary conditions. The approach used is to drill transects of sites in key areas across important gradients. These transects are designed to capture the limits of the relevant features of the ocean and to measure their

anticipated variation. The tools used are: micropaleontology, stable isotopes, geochemistry, sedimentology, etc. The output of these experiments is the history of the system investigated, including: surface and deep temperatures, currents, productivity, atmospheric circulation, changes in ocean elemental budgeting, etc.

OHP spent some time in considering the planning of upcoming Leg 130 (Ontong Java Plateau) which was scheduled at the last Annual PCOM meeting. OHP favors drilling OJP-3 (deeper) rather than OJP-6. The Co-Chiefs may reverse this on the basis of their findings in the other sites. If for some reason time becomes available unexpectedly, OHP advocates returning to drill OJP-6 as well as OJP-3. At OJP-1 time should be devoted to double-XCB work in the Miocene section. The APC part of the hole essentially would duplicate DSDP Site 586 which already well-covers this section.

Discussion

Austin asked if deep stratigraphic tests are still an approach that is of interest to OHP. Shackleton said that it continues to be of interest. von Rad wanted to know if the two proposals for Atolls and Guyots could be combined into one leg. Shackleton said that this is unlikely. There is interesting paleoceanography in both proposals. Kastner asked about the impact of sampling policies on the science in high resolution studies. Shackleton said that as long as the prospectus spells out the sampling needs, they should be accommodated.

In regards to drilling on the Ontong Java Plateau, Jarrard suggested that the FMS might be useful in determining gaps in recovery at OJP-1 since it has been successfully deployed in soft sediments. A discussion ensued about what to do if time becomes unexpectedly available for drilling after OJP-3; whether to use it to deepen drilling into the basement beyond 50 m at OJP-5 or to drill a hole at OJP-6. After a lengthy discussion the following consensus was reached.

PCOM Consensus

- 1) If more than 6 days are available at the end of completing the proposed drilling at sites OJP-4, -3, -2, -1, -5, the latter 50 m into basement, then that time should be spent transiting back to OJP-6 and coring at this site; 2) If less than 6 days are available at the end of completing the proposed drilling, then that time should be spent deepening OJP-5 further into basement; 3) If drilling is 4 days ahead of schedule after drilling at OJP-4 and OJP-3, then OJP-6 should be drilled before continuing with the program in the prospectus.

It was pointed out that OJP-6 had not been reviewed by the safety panel. Garrison and Ball agreed to take care of a quick review of this site.

SGPP

E. Suess presented the first annual report for the Sedimentary and Geochemical Processes Panel. During 1989, reviews of proposals was the single most time-consuming and generally overwhelming agenda topic. SGPP reviewed more than 48 proposals, with about 75% within the realm of thematic interests of the panel. Of the six programs under consideration for drilling in FY91, SGPP was concerned with those involving convergent margins and hydrothermalism. SGPP rankings of these programs were: 1) Sedimented Ridge Crests; 2) Cascadia Accretionary Prism; 3) East Pacific Rise Bare Rock Drilling; 4) Eastern Equatorial Pacific Neogene Transect; 5) Lower Crust at 504B; 6) Chile Triple Junction.

SGPP has examined its mandate as well as the parts of the SOHP White Paper within the panel's mandate and has drafted a new version of the White Paper. Chapter headings defining areas of SGPP thematic interest are: Sediment Fluxes; Sealevel; Fluids & Gases; Metallogenesis; Paleocan Chemistry; Technology. Proposals are generally being grouped to match the chapters of the White Paper; this should ensure optimal functioning of the panel.

Technological developments are needed in the areas of sand recovery, pressure core barrel phase II, and pore-water and gas sampling. SGPP is concerned that a TAMU engineer was unable to attend their meeting. SGPP has suggested that D. Stow or W. Normark serve as *ad hoc* liaisons to TEDCOM to track developments in sand drilling, for which there is a renewed interest and requirement for addressing important panel themes. Part of the SGPP mandate is fluid circulation in the lithosphere. Technological and scientific advances since the time of DSDP require a major overhaul of fluid and gas sampling and analytical procedures. SGPP is preparing fluid sampling recommendations for SMP concerning: minimizing artifacts, optimizing PCB-II, high temperature regimes, packers, instrument holes, and sampling policy. For the PCB Phase II, SGPP is recommending the following features: multiple lock-on chambers, physical properties of clathrates, imaging of internal structures, controlled sub-sampling, microbial rate-experiments with incubation and injection of poison, P-T phase stability experiments, calibration of logging parameters. For the PCB Phase III, SGPP suggests: titanium construction, thermal history during recovery, self-squeezer. To help eliminate artifacts due to the present shipboard sampling procedures, SGPP recommends titanium squeezers, *in situ* temperature squeezing, inert atmosphere squeezing, and flexible sample frequency policy.

SGPP is concerned that sealevel gets fragmented attention in ODP. Sealevel is of thematic interest to several panels. There has been a large number of proposals concerned with this topic. It is of interest to a wide spectrum outside of ODP as part of the Global Change Program of the International

Geosphere Biosphere Project. Sealevel change provides high visibility for ODP. SGPP recommends that a Working Group be formed to define an ODP plan for studying Sealevel change by drilling.

SGPP has been discussing the thematic needs for the use of radioisotope experiments on the *Resolution*. SGPP sees several important studies which will require their use on the vessel, these include: microbial rates, fluid flow, cross-well tracers. SGPP will be discussing this matter further at the next meeting and will then give its input to SMP and DMP.

SGPP is still in need of additional panel members in the area of ocean floor petrology, sedimentary processes and would like to retain M. Goldhaber for an additional year on the panel. SGPP recommends the formation of a DPG for the Cascadia Accretionary Prism. Both proposals are of high thematic interest to SGPP, although Oregon has greater fluid-dominated aspects.

Discussion:

Storms said that TAMU was not able to send the person working on vibracoring to the SGPP meeting. Garrison said TAMU does recognize that engineering input is necessary for developing the science plan but time constraints and limited travel budgets put restrictions on the number of meetings to which representatives can be sent. Rea said that the visit of the TAMU engineer to CEPAC was very helpful and led directly to the recommendations around which the next Engineering Leg was planned. He said that these visits should be encouraged. Garrison said that a special invitation outlining the panel concerns would be helpful. Leinen suggested that more meetings at College Station might be necessary. In this way a variety of expertise is available without putting much strain on the TAMU engineer's time and the travel budget. Shackleton said that TAMU input is important for all panels. Moberly said that Leinen's suggestion is good; questions concerning technological developments should be concentrated into one meeting close to TAMU.

Cowan asked if outside reviews of drilling proposals would help ease the burden placed on thematic panels. Suess said that he does not see outside reviews as being a solution, the panels will still have to review the proposals themselves. One possible solution would be to spend time at meetings reviewing only those proposals of high thematic interest. Moore said that more working groups and detailed planning groups are needed to carry out the detailed work. Brass and Detrick agreed with Moore.

Leinen said that the Sedimented Ridges Program recommended by the DPG consists of two drilling legs; should PCOM commit to scheduling both legs or is one higher priority than the other? Suess replied that the program is not a question of leg 1 vs. leg 2, the plan is to drill leg 1 then wait an appropriate time to get the results necessary for drilling the second leg. If the program is

limited to only one leg, then it would have to be completely redesigned. The program is highly recommended the way it now stands.

TECP

I. Dalziel presented the annual report for the Tectonics Panel. Highlights for 1989 include: publication of the TECP White Paper in the JOIDES Journal, transition in planning from a regional mode to the thematic mode, Japan Sea downhole electrical resistivity and seismometer experiments, and interpanel planning. TECP has overlapping interests with the other thematic panels which include: accretionary prisms with SGPP; paleogateways and climate change with OHP; and structural evolution of oceanic lithosphere and hydrothermal circulation with LITHP.

TECP ranked the six programs under consideration for drilling in FY91 in the order: 1) Chile Triple Junction Leg #1; 2) Cascadia Margin Leg #1; 3) Chile Triple Junction Leg #2; 4) East Pacific Rise Bare Rock; 5) Sedimented Ridge Crests Leg #1; 6) Cascadia Margin Leg #2; 7) Lower Crust at Site 504B; 8) Sedimented Ridges Leg #2; 9) Eastern Equatorial Pacific Neogene Transect.

TECP recommends that a working group to address strategies for drilling accretionary prisms needs to be formed in cooperation with SGPP. Another working group or a workshop is recommended to formulate strategies for studying continental breakup and the associated volcanism. This should include continental geologists to help integrate models based on ocean margin and on-land studies. TECP also supports the formation of a Deep Drilling Working Group.

TECP no longer supports the Hawaii Flexure proposal strongly, but a hole to study secondary igneous activity and for placement of a downhole seismometer off of Hawaii receives strong panel support. TECP recommends that ODP make holes available for the placement of downhole seismometers. TECP is concerned that proposals for making stress measurements, for studying plate dynamics, may not appear until the general track of the ship is known.

Discussion

Moberly suggested that a workshop would be a more appropriate setting than a working group for formulating strategies to study continental breakup and associated volcanism. Someone needs to take the lead in approaching JOI/USSAC concerning this. Austin said that there have been a large number of ODP drilling proposals for studying these processes in the Atlantic; perhaps a DPG is needed to sort them out since we are changing the way we approach these things.

von Rad posed the question of whether the Deep Drilling Working Group would be primarily scientific or technological in nature. He said that volcanic-margin drilling will also require deep penetration. Dalziel replied that the strategy for volcanic margin drilling would be to avoid having to penetrate 5 km of basalt and sediment. There is a need for technological planning if ODP is to develop the capability to conduct these kinds of studies.

Because of a concern that TECP has some themes that have not been addressed by drilling proposals, Kastner suggested that TECP do something similar to LITHP and place an ad soliciting proposals for its high priority themes. Austin thought that this might be a good idea for ODP in general after establishing the 4-year general track of the vessel.

819 Non-JOIDES Representation in Planning Process

J. Baker president of JOI discussed the reasons for the recent initiative to place someone from a non-JOIDES Institution on PCOM. There had been some questions about the openness of the planning process in the PEC I & II reports. There was a concern that institutional appointments may not always provide the best science advice to ODP. USSAC was formed to widen the advice to the program. Members of USSAC come from both JOIDES and non-JOIDES institutions. Institutional appointments were discussed by the JOI Board of Governors. The initial suggestion would have replaced one of the JOIDES institutions for a 4-year period. The latest proposal would leave a JOIDES Institution out of PCOM for only 1 year in every 8 years. The JOI Board of Governors have given a mixed to negative response to the last proposal. JOI is examining other mechanisms for including non-JOI advice in the planning structure at the request of the JOI Board of Governors.

Discussion

Moberly said that scientific advice does come, from the one-half of the panel members from non-JOIDES institutions. Baker said that there is a sense that since non-JOIDES members cannot serve on PCOM, they cannot make decisions about where the ship goes. Rea suggested that this was the feeling of only a few individuals and not a large community. Moore said that the panel chairmen addressed this question and there is good broad scientific input and advice; JOIDES, however, should strive to maintain the present balance with about half of the advisory structure from non-JOIDES institutions. Brass suggested that there is no real problem since PCOM is planning what the community wants drilled. Brass questioned whether the individual chosen would be a true outsider or someone at a non-JOIDES institutions with many ties and involvements with JOIDES institutions and ODP. Austin said that it is important that PCOM maintain a disciplinary balance. Baker said that the balance question should be examined when a member rotates. Moberly said that C. Helsley had asked EXCOM to address the balance question.

Leinen asked if the initiative was an attempt to sell the program as a part of the renewal process. Baker said that the initiative is to try and make the program stronger by gathering a larger community behind ODP. Kidd thought that ODP does not need to defend itself by changing the structure that works since the evidence is that the program is open to advice. Rea and Moore said that interested faculty at their non-JOIDES Institution discussed the question and do not see any reason to change the present structure.

Kastner said that if another partner is added to ODP, that would be the time to make adjustments in the structure of PCOM and possibly JOIDES. Dalziel asked if another US institution could join JOIDES. Baker said that the original concept of JOI was a small group of oceanographic institutions which met certain requirements concerning faculty size and research programs. Additions to the membership could be considered.

Weissel asked what the prospects were for adding new international partners. Baker said that the prospects for having the USSR join are improving. The new administration appears to be more open to USSR participation. Other possibilities include a consortium including South Korea and one formed by the International Oceanographic Commission. Brass said that members of PCOM could help with the IOC. von Rad asked if adding new members would provide more funds for technological development. Baker said that there is no guarantee that the \$2.75M would go to ODP.

820 Status of Engineering and Technological Developments

Slimhole & High-Temperature Logging Meeting

B. Harding of TAMU-Engineering talked about the joint meeting of drilling and logging personnel associated with both the Continental Science Drilling Program (CSDP) and ODP held on November 17 1989 in College Station, Texas, to discuss the present status of logging tools compatible with running in both 4-inch diameter holes and in holes in which the equilibrium temperature is $\geq 300^{\circ}\text{C}$. The following items were discussed and agreed concerning joint cooperative efforts by the CSDP and ODP: 1) Drilling (DCS in particular) and logging must be viewed as integrated systems and both considered in achieving the optimum solutions; 2) The entire present logging suite of tools currently run by both CSDP and ODP do not conform to a 4-inch outer diameter (O.D.) hole and will not achieve even 200°C in hole temperature; 3) Cooperative efforts between the various agencies of the Interagency Coordinating Group (ICG) and ODP should be pursued in order to pool both human and fiscal resources regarding logging tool repackaging for slimhole and hothole conditions; 4) Since the majority of present day logging tools cannot meet more than 200°C as well as a 4-inch O.D. hole, reasonable goals should be established for the short term (18 months), medium term (2-5 years), and long term (> 5 years) in defining the priorities for tool repackaging, dewatering or new tool development; 5) Letters proposing joint logging tool

efforts should be written to the Interagency Coordinating Group, and also proposed to ODP's PCOM.

Kappel said that T. Pyle has sent out the letter to the ICG participating agencies. Kastner asked what the next step should be if \$1M is available for developing these tools. Worthington said that ODP will see what can be done with existing tools in regards to the limitations imposed by temperature and hole size. There will be a focus on measurements which cannot be made from core. Batiza was asked about LITHP priorities for logging measurements and he presented the list given previously (see Minute 818). Brass asked why fluid resistivity was so important when the borehole fluids will be drilling fluids unless the hole is flowing. Fluid resistivity measurement are important for identifying zones of fluid inflow. Detrick said that pore fluid sampling is very important but has been given low priority because the technological feasibility is low and fluids can be sampled from cores.

Storms said that E. Davis has visited TAMU to discuss the possibility of placing a plug in the reentry cone with feed-through connectors into the hole for sampling and monitoring. TAMU thinks that a simple plug is feasible and that the plug could be removed by the *Resolution*. Third-party development of the plug is most desirable. ODP-TAMU will review the design, operation and technological compatibility. The sensor and data package will have to be done by outside parties, but the seal can be constructed by TAMU. Detrick said that Davis is taking the lead in development of a recording package and Becker is looking into sensor development. Harding said that TAMU needs input on the importance of this plug, since there must be a commitment of time and resources to have it available.

Tucholke said a list needs to be prepared spelling out what is needed based solely on scientific desirability, what will be possible, and when these tools will be available. The list of scientifically desirable measurements needs to be prepared by the thematic panels (done for LITHP; needed from SGPP). DMP will need to evaluate which are possible and when they might be available.

R. Jarrard of the LDGO Borehole Research Group discussed slimhole and hothole logging developments. A prospectus for downhole measurements for CEPAC programs was distributed. ARCO has given the BRG a suite of slimhole logging tools that is of a mid-1970's technology. A review has been prepared of what tools exist. Hole cooling models have been run to simulate conditions in a 4-inch DCS hole and in a standard RCB hole. Using a cooling strategy with circulation and logging using the Side Entry Sub, the temperature in a RCB hole should not exceed 150°C, while in the DCS hole the temperatures approach the equilibrium profile and are too hot for the current suite of logging tools.

The *Atlas Formation Scanner* can be used to measure temperature, pressure and flow in 4-inch holes. Two of these tools would cost about \$625K and

require about one year lead-time for their purchase. These tools can be leased for about \$10K per day. These tools are quite reliable and are heavily used by industry. It is not reasonable to expect Sandia to lend ODP their high-temperature tools continuously for 2 years.

The BRG now recommends that a caliper tool be used in the DCS hole on the Engineering II Leg, to test the ability to deploy slimline tools if there are caving and bridging problems. Harding said that the caliper tool and another dummy tool can be run on this leg. Natland said that the caliper and natural gamma would be useful to have at Shatsky and should be tried there if time is available. Storms said that the caliper measurements would be useful in evaluating drilling tests.

Jarrard said that BRG will not receive the \$180K requested for slimhole and hothole logging until October 1, 1990. It is unlikely that these tools can be ready in 6 months. Watkins asked how critical these tools are to the success of the leg. Batiza said that temperature is critical, but other measurements can be done on core or logging can be done at a later time. Brass said that this assumes about 95% core recovery.

Engineering Developments

B. Harding then presented the status of various engineering developments. A handout giving the details of their status was distributed. The developments discussed were: Navidrill Core Barrel (NCB3) which is to be constructed and then land tested sometime in mid-1990; Sonic Core Monitor (SCM) has been shown to work and will be tested further on Leg 130; Drilling and Straddle Packers (TDP & TSP) are ready for use on Leg 131 (Nankai) and manuals are being prepared; Advanced Piston Corer-Design Upgrade (APC) is being worked on and will be available on Leg 130; APC Breakaway Piston Head (BPH) is almost completed and will be field tested on Leg 130; Pressure Core Sampler (PCS) is ready for use on Leg 131 (Nankai) and the Phase II is awaiting input from SMP and SGPP; Vibra-Percussive Coring (VPC) is under design and a pre-prototype model is scheduled for completion by December 1990. Technical support of third-party developments continues to be a significant role of ODP engineering, these include the new Side Entry Sub (SES) of the Lamont BRG which is undergoing further design work and should be ready for sea trials around Leg 133 (NE Australia); Reentry Cone Plug which is under discussion with E. Davis and others; the Geoprops Probe being developed by Dan Karig and still in the design phase and probably will not be deployed before Leg 134 (Vanuatu) well after Leg 131 at Nankai; Lateral Stress Tool (LAST) being developed by K. Moran and should be ready for use at Nankai; and the Pressure Meter also being developed by K. Moran which should be tested by late January 1990 but is not scheduled for use at Nankai. The Development Engineering schedules (Appendix E) were shown.

Discussion

Kastner asked why there was no anticipated completion date for the Navidrill. Storms said that until there is another field test of the Navidrill the amount of work needed to complete the design is unknown. Kidd asked about the availability of funds to work on these projects. Harding said that the 4000-m DCS system cost more than estimated, but there appears to be adequate funding for the present developments. One problem is the loss of two visiting engineers will mean that no new major projects can be undertaken although minor projects will be handled.

Detrick asked if the sealable plug for reentry cones needed to have PCOM approval to have the work begin on construction. Harding said that manpower can be put towards the planning but money for the material to build it must be put into the FY91 budget. The sensor and data package will have to be designed and constructed by third-parties, but the seal can be constructed by TAMU. Detrick said that it is important that a seal be ready regardless of whether or not there is an instrument package available for deployment at the time of the drilling. The seal will be essential for the hydrothermal programs at Sedimented Ridges, EPR Bare Rock, and Cascadia Accretionary Prism. Moberly summarized the consensus of PCOM that the seal should be ready for the drilling of these three hydrothermal programs and TAMU should be asked to have the seal ready for the drilling at these sites.

Shackleton asked if the DCS would be available for drilling reefal limestone on the NE Australia Leg. Harding said that there would be a problem with degradation of the system if it was simply stored on the *Resolution* and not used on the rig. There would also be a problem storing the mining drill rods because of space limitations. Storms said that there would also be other problems such as having experienced drilling personnel and having the proper hardware such as guidebases on board. This is a proto-type system and cannot be used routinely at this stage.

Operational Plans for Second Engineering Leg

M. Storms distributed the Leg 132 Prospectus as well as a handout on Phase II of the DCS. He reviewed the improvements that have been made in the system since Leg 124E which include: redesigning the secondary heave compensator; switch to an electric top drive and wireline winch; modifications to platform and mast, improvements in drill rod string; new core barrel assembly; wider selection of cone bits; mini-hardrock guidebases; and back-off sub. The Phase II of the DCS will be tested in mid-January at the DRECO yard in Clearlake, Utah. Another land-test in fractured rocks is planned at the Kennecut Copper open pit mine in Salt Lake City, Utah sometime in February 1990. The DCS will be shipped to Pusan, Korea sometime in March 1990 for sea-tests on Leg 132. The drilling crew on this leg

will not be the same as was on Leg 124E, and will have to be trained in the use of the DCS. Storms next went through the plans for Leg 132 as given in the prospectus. Storms said that the vendors have also put in a lot of engineering time and effort in developing the system. The science support from JOIDES is also expected to improve this test of the DCS.

Discussion

Kidd requested that the *Resolution* collect site survey data on its way to Shatsky Rise since this region is poorly surveyed. Storms said that there was no time planned for surveying other than during the approach to the site.

Kastner was concerned that the proposed drilling on MIT Guyot was not sited in the reefal facies, which was the intention of drilling at this site. Natland said that the extent of the reefs is uncertain and the plan was to drill where it would be easier to start a hole. Tucholke said that the intent was a real test of the ability of the DCS to recover the karst reef and not the lagoonal sediments. Natland said that the test of the DCS should not be determined by our ability to place the guidebase. Tucholke and Kastner said that the test should be done on the reef. Moberly said that the challenge is to drill and recover both reef rubble and other sediments. Brass said that since the plan is not for deep penetration, the siting should ensure that the reef is not missed and therefore should be sited on the reef. Moberly said that the consensus of PCOM is that the DCS test on MIT Guyot should be sited on the reef.

Future Engineering Legs

Harding said that preliminary plans are being made for two additional Engineering Development Legs. Engineering III will be devoted to cleaning 504B and setting the hardrock guidebases and spudding-in at the EPR Bare Rock Drilling sites. Engineering IV (Appendix E) will test: new developments of the DCS; various tool developments including the sonic core monitor, feasibility of drilling a 3 km-deep hole in sediments; vibracoring of sediments; new generation of drilling packers; and high-temperature tools.

821 Issues Related to Community Concerns

Members of the JOIDES Community have raised the following issues with the JOIDES Office. In one form or another they have also been on the mind of the PCOM Chairman. Necessary, action should be taken to solve, if possible, those considered by PCOM and the Panel Chairmen to be serious problems. If not a specific action now, there might be an *ad hoc* committee formed to report its advice at a later meeting.

1. Planning for long-range technological developments. The Long Range Plan is divided into phases, to allow engineering developments in advance of drilling. At present a major effort aimed at better core recovery is maturing

with the development and testing of the diamond coring system. Another major effort is evolving towards high-temperature drilling and logging. Deep drilling is planned for later phases of ODP. LITHP wants to penetrate to the mantle; TECP and SGPP want to learn about the deep parts of accretionary prisms; OHP wants deep stratigraphic tests near the margins of continents. Who or what group will begin the task of evaluating what needs to be done, and the timetable? Should there be special working groups? Should TAMU be charged with the scheduling? If so, from what parts of JOIDES will they receive advice? Should this wait for COSOD III?

This matter came up during several previous discussions and the decision was that TEDCOM needs to continue its role advising TAMU about these developments but with additional direct input from the thematic panels. A clearly defined and prioritized set of objectives is required from the thematic panels. A working group may be needed to provide advice on this matter and this will be decided after TEDCOM makes its recommendations.

2. Weight of PCOM decisions. Can there be a mechanism to make it more difficult for PCOM to change its decisions? Or, if a problem does exist, is it because decisions are made without careful consideration of the issues? During the days of DSDP, including IPOD, more than a bare majority was needed at PCOM for a decision. Admittedly, there were some procedural problems when members had to leave a meeting early if they did not leave a proxy with someone. Should PCOM follow the example of EXCOM, which "shall reach its decisions by the affirmative vote of at least two-thirds of all members, including members from at least three non-US members"? Will this, or some other way, ensure careful consideration of issues?

This matter was deferred to the next PCOM meeting.

3. Mix of activities of DPGs and thematic panels. Thematic panels have the best view of the thematic importance of a particular program or leg. To what extent, if at all, should thematic panels be used for detailed site selection and calculation of drilling times? A DPG might be ideally constituted to judge proposals from from other areas on the same theme. To what extent should a DPG be used to evaluate proposals?

This matter was discussed extensively by the Panel Chairmen who have made recommendations for the formation of DPG's and Working Groups (see Minute 817).

4. Final planning (or, cramming it all into a leg). Every group or person wants to be the last one to plan or comment about a leg. Thematic panels who had no earlier interest in a leg want to add work after a leg is accepted. Thematic panels who did have earlier interests in a leg are unhappy when a DPG reaches a compromise that is less than all of the wishes of all of the panels. DMP and BRG are unhappy when all of their logging

recommendations cannot be fit into the time available. PCOM wants to send liaisons to the pre-cruise meetings to ensure that its objectives are covered. Can we be kinder and gentler? Are we missing something in communications? Or is it the nature of a multi-million dollar project to bring out so much unhappiness when one's own project is not completed to the degree one had hoped?

During the earlier phase of DSDP (based on regional panels) and in the later IPOD phase (based on thematic panels), PCOM took the advice of its panels and of its liaison to DSDP, and PCOM planned the legs (which sites, what objectives, what transit times, and so on). PCOM then nominated Co-Chief Scientists to carry out what they had planned. With rare exceptions it seemed to work.

5. JOIDES closed to peer review of new ideas. We have heard the expression that greatest obstacle to a continuation of ODP is neither a shortage of funding in the various countries nor non-JOI participation in high level decision-making. Rather, some have pointed to the lack of outside peer review of proposals. The case is presented that a small community of scientists on JOIDES panels leads conferences, writes white papers, receives proposals, and judges them against the themes they established. Further, this community, by virtue of nominating their successors, perpetuate their ideas (now, indeed, panels can write their own proposals!). The allegation has been made that it is exceptionally difficult to get a fair review of new scientific ideas. A single leg is more than a \$3M project, counting all parts of its planning, operations, and data interpretation. Should not there be outside reviews of such expensive proposals, especially of ones that do not fit within the top themes of panels? Should there be outside reviews of such major planning documents as the Long Range Plan, panel white papers, and the COSOD reports?

We have tried to bring in "fairness" into the decision-making process by establishing a particular process (proposals matched to published thematic objectives; proposals placed in programs; programs ranked regardless of location). Is this the proper process?

This matter was also discussed by the Panel Chairmen (see Minute 817) and was not judged to be a major problem. PCOM does upon occasion solicit advice from outside of JOIDES concerning proposals.

6. Publications: quality, speed, and costs. The JOIDES Office continues to receive comments from IHP, TAMU, Co-chiefs, and leg participants about publications. Different countries and different disciplines view ODP publications from different perspectives. Not all of the proposals in the IHP minutes seem to reflect the desire of the EXCOM and PCOM to speed publications and to get publications into the open literature. Co-chief scientists of two legs, who have long histories of service to JOIDES, are not

pleased that cruise synthesis manuscripts are so vulnerable in the schedule. Is the Editorial Review Board a solution or part of the problem?

This matter was discussed by both the Panel Chairmen (see Minute 817) and during the annual report of IHP (see Minute 816).

7. Shared advice and shared decisions. Occasionally JOIDES advice is needed before a regular PCOM meeting. In the case of ship operations and budget matters, simple and rapid procedures are in place. Requests from the ship regarding unexpected operations, changed sites or drilling and logging programs, etc. go from the ship to Lou Garrison to the PCOM Chairman and, if necessary, the JOI Program Director, or for safety matters, the PPSP Chairman. In the case of budget matters, the 5-member BCOM can act for both PCOM and EXCOM. In many other matters, the PCOM Chairman can and does contact panel chairs and PCOM members for advice. There have been questions about how adequate these procedures are. Should there be a small subcommittee of PCOM to join on a conference call before decisions that cannot be put over until a regular PCOM meeting? If so, should it be formally established as a "management council" or "crisis committee" or whatever (size?; how constituted?), or always be on an ad hoc basis? Should there be a formal requirement to contact thematic chairs or other chairs before certain kinds of decisions? If so, what kinds?

After discussion the general consensus of PCOM was that the PCOM Chairman should make these decisions and there was no reason to have a special subcommittee formed. In the event that R. Moberly is not available to make an immediate decision, J. Austin will stand in if necessary.

Wednesday, 29 November 1989

822 Detailed Planning for Easternmost Pacific Drilling

D. Rea reported the results of the three meetings by the Central and Eastern Pacific Detailed Planning Group during 1989. An update of the CEPAC Prospectus was distributed. The CEPDPG recommends the formation of both a Cascadia DPG and an East Pacific Rise DPG. The CEPDPG should meet one more time to prepare a Third CEPAC Prospectus. In addition to the six programs under consideration for drilling in FY91, the following programs are also being considered: Downhole Seismometer Off Hawaii; North Pacific Neogene; Bering Sea; Shatsky Rise; Atolls and Guyots; Hawaii Flexure; and Loihi. The North Pacific Neogene has received new impetus since carbonate fossils are now known to be preserved. Pelagic windows through the turbidites are found on seamounts in the Gulf of Alaska. There are multiple objectives for the proposed drilling including: Paleogene and Cretaceous paleoceanography; atmospheric circulation; and plate kinematic objectives. The Atolls and Guyots program has two separate and distinct proposals, both of which are good and address important themes. Loihi Bare Rock would

require a hardrock guidebase but is otherwise ready to go to study the early phase of ocean island volcanism. Hawaii Flexure is not receiving much support these days. Shatsky Rise will have some drilling during Leg 132 Engineering II. The status of the six CEPAC programs under consideration for drilling in FY91 are given in the CEPAC Prospectus Update.

Cascadia

The Cascadia Margin has two competing proposals. The proposal for the Oregon portion of the margin has been updated after several recent cruises. More is known about fracture control of the venting of fluids and the locations of active vents. The proposal for the Vancouver portion of the margin has evolved from a deep hole into more of a hydrological and deformation processes study. Several recent Canadian cruises have indicated that the fluid expulsion is not controlled by fractures. A DPG is needed to sort out these two programs, since CEPAC lacks the adequate expertise.

Discussion

There was a general concern expressed by PCOM that the objectives for drilling at Cascadia are not well-defined. Suess said that SGPP views the drilling as being important for understanding the global geochemical cycling of elements in the ocean. The Oregon proposal is favored by SGPP because the relationship between fluid flow and tectonic structure is better understood. The fluid flow aspects of the Vancouver proposal would be better understood after drilling. Dalziel said that with the present technology, TECP favors drilling the Oregon part of the margin to understand the fluid flow aspects. Crawford said that in terms of fluid flow from accretionary prisms, the Vancouver margin appears to represent the diffusive end of the spectrum, while Barbados represents the focussed end. Oregon appears to lie between the two ends.

PCOM expressed a general concern about whether drilling at Cascadia would require one leg or two legs and if so, what would be included in these legs. Cowan was concerned that estimates for drilling are around 90 days for five holes, but more holes may be needed to do the job. Measurements of pore pressures and permeabilities will be important aspects of these legs, but packers are not recommended for making these measurements; How will this be accomplished? Kastner said that from a thematic viewpoint, PCOM should commit to one leg of drilling. Watkins said that until some information from drilling is available, the question of how many legs cannot be answered. Tucholke said that there is still some uncertainty about the best places to drill accretionary prisms; Is Cascadia the best area to answer these kinds of questions? Dalziel said that a Working Group on Accretionary Prisms was requested over one year ago to develop the strategies for drilling in accretionary prisms. TECP supports one leg of drilling at Cascadia and recommends that a DPG be formed to choose between the two proposals.

Suess said that there was no lack of long-term planning to address accretionary prism drilling in a world-wide context. Long-term goals have been set out in the Long-Range Plan with a strategy involving drilling various end-members of sediment type, convergence rates, and structural styles; Cascadia is part of this planned drilling.

Sedimented Ridges

R. Detrick presented the plan for drilling to understand Hydrothermal Processes at Sedimented Spreading Centers, prepared by the Sedimented Ridges DPG after its June 13-15, 1989 meeting in Ottawa. The detailed plan can be found in the CEPAC Update. The SRDPG examined competing proposals for drilling at the Guyamas Basin, Escanaba Trough, and Middle Valley. The criteria used for selection of the drilling location was based on the Sedimented Ridges Working Group Report which established two objectives for drilling of sedimented ridges: 1) A 3-D characterization of fluid flow and geochemical fluxes within a sediment-dominated hydrothermal system; and 2) A systematic investigation of the processes involved in the formation of sediment-hosted massive sulfide deposits. The Middle Valley area on the northern Juan de Fuca Ridge was selected as the site of the hydrologic study based on the simplicity of its tectonic setting, the level of current hydrothermal activity, and the completeness of site survey information.

An array of seven holes is proposed. Objectives for drilling include: 1) the size of the geothermal reservoir; 2) where does recharge occur; 3) what controls the localization of fluid discharge; 4) how does fluid move through the system; 5) what controls the fluid chemistry; etc. The highest priority is a single basement reentry hole drilled into the high-temperature reaction zone of the active system. Complementing this hole is an array of six shallower holes to define the pattern of fluid flow over a 100-200 km² area of Middle Valley. At all seven holes an extensive program of logging, fluid sampling, and borehole experiments is recommended, including hydrologic sealing and *in-situ* monitoring of temperature and pore pressure as the holes re-equilibrate after drilling is completed.

The SRDPG selected two sites in Middle Valley and a third area in Escanaba Trough along the southern Gorda Ridge for a sulfide drilling program. These deposits display differences in the level of current hydrothermal activity, the size and maturity of the deposits, and sulfide composition and fluid-rock interactions. The closely-spaced shallow holes and deeper drilling recommended in these three areas have been carefully integrated with the hydrologic study and will provide important constraints on the three-dimensional structure of these actively forming deposits, the effects of differing hydrothermal fluids and source rock interaction on their

composition, and the nature of post-depositional alteration within the sulfide mounds.

A total of about 115 days is required for drilling, logging and sampling, exclusive of transit times. Thus nominally two legs will be required to carry out the program recommended by the SRDPG. Ideally, these legs should be separated by about one year to allow hydrologic modeling of the initial drilling results to guide selection of the deep reentry holes; to monitor the re-equilibration of holes that have been hydrologically sealed after the first leg, and to provide additional time to develop the tools needed to drill into the hottest parts of the hydrothermal system. The SRDPG strongly recommends that two legs of drilling be devoted to sedimented ridges in the 1991-1992 time frame.

SRDPG concluded that PCOM needs to clearly identify responsibilities, funding and a timetable for the high-priority drilling and logging developments required for high-temperature drilling, both at the EPR and at sedimented ridge crests. SRDPG, LITHP and DMP have made several recommendations on which PCOM can act. These include: 1) LDGO Borehole Research Group be given responsibility for developing high-temperature logging capabilities for ODP, while TAMU should have responsibility for high-temperature drilling systems; 2) The \$300K now allocated for tool hire in FY91 and FY92 should be redirected for the development of high-temperature logging capabilities; 3) The Barnes-Uyeda tool be modified for higher temperatures (up to 200°C) and made stronger; 4) A slimline self-contained probe be developed or acquired to measure temperatures up to 350°C; 5) A combination logging tool be developed for use in conventional diameter holes (possibly using a modified side-entry sub to cool the hole while logging) to incorporate as many measurement requirements of SRDPG and LITHP as possible (temperature, fluid resistivity, formation resistivity, natural gamma radiation, sonic velocity, caliper, flow velocity, and borehole fluid pressure in order of priority); 6) A method of hydrologically sealing reentry holes be developed to monitor *in-situ* temperature and borehole fluid pressure as the hole re-equilibrates.

The approach of a working group to define objectives followed by a detailed planning group, as used for sedimented ridges has been very successful. The SRDPG has completed its job and should now be dissolved. A watchdog group is needed, however, to monitor progress on the engineering developments required for these legs and to review new site survey data as it becomes available. The SRDPG recommends this *ad-hoc* watchdog group consist of the four Sedimented Ridge Crest Co-Chief Scientists and a PCOM representative.

Discussion

Brass asked why it was important that the second leg of drilling fall within the 12 to 18 month period following the first leg. Detrick said that if the time period between the legs is too long, the venting may stop, but there must also be a period of time to learn from the first leg, which locations are best to drill on the second leg. Leinen asked if there were only one leg, would that translate into a choice of a hydrology vs. a sulfide program. Detrick said that the inter-dependent two-leg approach is the best for studying these problems. Leinen asked why two different sites were chosen for the sulfide drilling. Detrick said that the DPG wanted the drilling effort concentrated in one area if possible, but in order to study both the temporal aspects of the deposits and other controls such as sediment interaction and volcanic intrusions, two different types of deposits need to be studied. Brass asked if Middle Valley is the best place in the world to study these processes. Detrick said it was the opinion of the Sedimented Ridges Working Group that this is the best place, at this time, to study the hydrological aspects. The sulfide studies need to be done in a number of different settings, but the best combined study of the relationships between sulfides and hydrology will be in Middle Valley. Dalziel asked what is known about the tectonic controls on the hydrological systems. Detrick said that there appear to be some tectonic controls but the present seismic imaging is insufficient to understand them. Batiza said that LITHP has given its full support to the two-leg drilling program planned by the SRDPG. Suess said that SGPP has also given its full support. SGPP thinks sampling of fluids from the borehole is critical and also endorses the development of the plug for the reentry cone. Moberly said that natural laboratories such as the ones proposed for the Sedimented Ridge program were endorsed by both COSOD I & II, and committing ODP to two legs of drilling at this location is appropriate.

Chile Rise Triple Junction

The Chile Rise Triple Junction program will examine the intersection of the Chile Ridge with the Chile Trench. Drilling sites are designed to decipher the nature of the intersection of the ridge axis and the margin and to examine the margin both before and after its intersection with the spreading center. The Prospectus Update includes the new data gathered in that region and will be included in the Third Prospectus. The entire Chile Rise Triple Junction program including the pre- and post-collision aspects and fluid studies, will require two full legs of drilling to complete (estimates are about 105 days plus transit time). The most optimum way to design the drilling program is two back-to-back legs. TECP has given this program its highest rank. The best weather window for this program appears to be between December and April, but others suggest that it might be drilled at any time during the year. Clearances will not be a problem.

Discussion

Taira asked what the most important processes that will be studied at this location. Dalziel said that the processes associated with subduction of a ridge crest will be most important. Ridge crest subduction has a profound effect on the evolution of the Western America Cordillera and may also be related to the breakup of super-continent. Many processes are related to ridge crest subduction including: horizontal compression, stress in the upper plate, high thermal gradients, tectonic erosion, large vertical motions, anomalous trench volcanism, ophiolite emplacement, etc. Taira asked what the focus of the study would be. Dalziel said that TECP has endorsed two legs, with the first devoted to the zone of present ridge collision and the second on the history of the margin before and after the collision. Austin observed that this is probably the best site in the world to study the processes associated with ridge subduction. Cowan expressed a concern that hydrothermal aspects were ignored in the present proposal. Kastner agreed that fluids deserve more attention. [Note: Fluids are an objective of the revised proposal submitted just after the PCOM meeting and have resulted in a high ranking by SGPP.] Brass asked if this location would be a good place to look at the problem of the driving mechanisms of plate motions using stress measurements. Dalziel said this was true. Shackleton suggested that the top part of the sections should be cored with the APC rather than the RCB.

Eastern Equatorial Pacific Neogene Transect

Two transects of hydraulic-piston-cored holes will be placed to obtain continuous undisturbed sedimentary sections for studies of paleoceanography of the Late Cenozoic in the eastern equatorial Pacific Ocean. The proposed sites focus on the evolution of climates when the earth changed from an essentially non-glacial world to one dominated by extensive glaciation in the high latitudes. The objective of paleoceanographic measurements along latitudinal gradients represents a long-standing theme of the former SOHP and is highly ranked by the present OHP.

Knowledge of the development and the evolution of the equatorial circulation system in the eastern equatorial Pacific during the late Cenozoic is still limited. Previous sites have been located along east-west transects and have failed to monitor north-south shifts of the complex equatorial current system. Furthermore, existing holes are located in areas of reduced sedimentation with many hiatuses and lie at similar water depths, making it impossible to resolve vertical changes of the water mass.

The results of the cruise of Pisias and co-investigators to map, profile and piston core the proposed drilling sites along the latitudinal profiles at 110°W and 95°W have significantly strengthened this program. The changes have been incorporated into a revised prospectus chapter.

Discussion

Kidd said the site survey package is generally in good shape, but there is a concern with the watergun records for WEQ-2 (48 m thickness of sediments) which are virtually useless. Basement depths are poorly constrained. SSP suggests that the *Resolution* collect 3.5 kHz profiles as it approaches the drilling sites.

Leinen said that there is some question about the drilling time estimates. The time requirements may be too optimistic and one of the sites might have to be dropped if they are wrong. Elimination of the requirement of a third APC core, which is dictated by the present sampling policy, would save time. Moore said that IHP will make exceptions to the sampling policy when the scientific requirements are spelled out in the cruise prospectus. The ODP sampling guidelines are designed to protect the cores for scientific studies.

Leinen also pointed out that the time required for logging is inflated by the addition of stress measurements in basement using the BHTV, something that was not included in the original proposal. Jarrard said that the logging policy, concerning stress measurements, is to make them in targets of opportunity when recommended by TECP. It was suggested that a proposal may be necessary to justify these measurements when they require an additional two days per site. Dalziel said that TECP will need to discuss this matter to decide how important a stress measurement would be in this location. Kastner said that there is a difference between a target of opportunity and creation of the opportunity, and in this case the measurements may jeopardize the success of the leg. Moberly said that conventional logging should be done for this leg. The stress measurements need to be justified by a proposal and not endanger the success of the main objectives of the leg.

EPR Bare Rock Drilling

The investigation of magmatic and hydrothermal processes at mid-ocean ridge crests as part of the broader problem of crustal generation is an important thematic objective of LITHP. The East Pacific Rise displays many signs of vigorous hydrothermal activity and shows well-developed axial seismic reflectors interpreted as axial magma chambers. Thus the study of the high-temperature reaction zone above a magma chamber can best be done in the axial region of the East Pacific Rise. A drilling strategy for addressing the scientific objectives outlined above requires a suite of eight holes. There are two competing proposals for this program on the EPR, one focussed in the vicinity of 12°50'N and the other set near 9°40'N. Site surveys appear to be adequate for either location. A DPG needs to be formed to choose between the competing proposals so that the guidebases can be placed during early 1991 on the Engineering III leg.

Discussion

Batiza said that the EPR Working Group established the strategy and criteria to be used for selecting and planning drilling on the EPR. LITHP endorses the formation of a DPG to make the choice and do the detailed planning. Kastner said that the DPG should include proponents of both sites. Kidd said that SSP is waiting to see the data for the two areas, but it should be adequate.

Lower Crust at 504B

A primary objective of JOIDES and the Ocean Drilling Program is to core as deeply as possible beneath the ocean floor to constrain seismic and petrologic models of the structure and evolution of the oceanic crust. At the present time, the highest ranked program of LITHP is deepening Hole 504B through the oceanic layer 2/3 transition into layer 3 gabbros. Without remedial work, scientific drilling cannot continue at Hole 504B. Part of an engineering leg is required to clean out and recase 504B. The engineers have decided that an attempt to mill and fish the junk in the hole will be the most efficacious method of cleaning the hole. The engineers say that they will know within the first 10 days of operations if the fishing will work. The bottom of the hole will be cemented and then milled. A new hole can be drilled in 37 days with no coring, but LITHP has said that another site should be considered before re-drilling at Site 504. Time estimates for engineering operations at 504B and at the EPR are around 79 days at sea. Current operational plans are to divide the leg into a part A at Site 504B and a part B at the EPR. From the end of Leg 135 (Lau Basin) until the start of the next science leg (Leg 137) about 92 days will pass without scientific drilling. This is due in part to the long transit time (~16 days) to Site 504B from Papeete following Leg 135 and the necessity of a port call in Panama during the engineering operations.

Discussion

Detrick asked if the DCS works for drilling and recovering fractured rocks on Leg 132, why not start the scientific drilling on the EPR instead of having an engineering leg? Storms said that even assuming everything works successfully on Leg 132, more time will be needed on the third engineering leg to test drilling deeper into fractured rocks and to test high-temperature drilling equipment. Time must also be devoted to setting two hard-rock guidebases and drilling the BHA into bare rock to start the holes for the DCS.

823 Drilling Plans for 1991

At the Spring PCOM meeting in Oslo PCOM voted to schedule the ship track for 1991 from among the following list of programs given high priority by the thematic panels: Cascadia Accretionary Prism; Chile Triple Junction; Eastern Equatorial Pacific Neogene Transect; East Pacific Rise Bare Rock Drilling; Hydrothermal Processes at Sedimented Ridge Crests; and Lower Crust at Site

504B. Because of unexpected transits to the dry-docking of the *Resolution* in Singapore and some other delays the ship will not arrive for Engineering III at Site 504B in the Eastern Pacific until sometime in March 1991, much later than planned. PCOM had intended to schedule 10 months of scientific drilling from these six programs. PCOM has also committed itself to global thematic planning after 1992. It was noted many times during this meeting that the lack of sufficient long-range planning is beginning to have serious repercussions for ODP. Therefore after a prolonged discussion about the time period for which PCOM should be planning the ship track at this meeting, the following motion was passed.

PCOM Motion

PCOM will schedule legs through the end of calendar year 1991. PCOM acknowledges the earlier commitment to global planning after 1991, but the immediate need for technical developments (i.e. high-temperature, slimhole tools) makes it prudent to plan tentative additional legs through the spring of 1992. PCOM will evaluate these tentative legs at the April 1990 meeting based on the global drilling priorities from the thematic panels. (Motion Leinen, second Brass)

Vote: for 16; against 0; abstain 0

At its 1990 Annual Meeting PCOM will also re-evaluate the schedule when it formulates the FY92 Science Plan.

The readiness of the six programs in terms of tools needed for successful drilling or scientific measurements was reviewed. Cascadia, Sedimented Ridges Leg #1, Chile Triple Junction, and Eastern Equatorial Pacific Neogene have the necessary tools. EPR Bare-Rock drilling requires successful development of the DCS and high-temperature slimhole logging tools. Drilling at 504B requires that the hole be cleaned of junk. The desirability of scheduling drilling at 504B and the EPR in view of the questions about their readiness for drilling was discussed. PCOM has previously committed the *Resolution* to an Engineering Leg to prepare for drilling at 504B and the EPR as soon as the ship comes to the Eastern Pacific in 1991. Scheduling of drilling at 504B or the EPR should be done as soon as practical after the Engineering Leg. Jarrard said that this should not be any earlier than July 1991 to have any hopes for tool development. These legs need to be scheduled simply to ensure that money will be allocated for the necessary tool development. Since the drilling at 504B and the EPR has been such a long-standing priority of LITHP and in addition ODP has spent considerable funds to develop the technology in preparation for this drilling effort, PCOM agreed that drilling of at least one of these programs should occur in 1991. PCOM next discussed the merits of Cascadia vs. Chile Triple Junction. There was no strong consensus that one program was better than the other; both would appear to require two legs of drilling; both require some additional detailed planning; they are both appealing to TECP and SGPP and to wider earth science communities. Taking

into consideration the rankings of the thematic panels, weather windows, transit constraints and tool development schedules, PCOM passed the following motion.

PCOM Motion

PCOM schedules the following legs for drilling in calendar year 1991: Hydrothermal Processes at Sedimented Ridges I, Eastern Equatorial Pacific Neogene Transect, Lower Crust at 504B. In the event that Lower Crust at 504B cannot be drilled, East Pacific Rise Bare Rock Drilling will be substituted. (Motion Leinen, second Brass)

Vote: for 14; against 2; abstain 0

The Science Plan for the FY91 Program Plan will include the purposes, sites, and drilling plan for each of these legs, as developed by the appropriate DPG.

Because there is an immediate need for technical developments (i.e. high-temperature, slimhole tools), PCOM tentatively planned additional legs through the spring of 1992 which will be re-evaluated at the April 1990 PCOM meeting based on the global drilling priorities from the thematic panels.

PCOM Motion

PCOM tentatively schedules the following legs for drilling after Lower Crust at 504B: 2 legs of drilling at Chile Triple Junction, East Pacific Rise Bare Rock Drilling I, Cascadia Accretionary Prism I, and Hydrothermal Processes at Sedimented Ridges II. (Motion Leinen, second Mevel)

Vote: for 13; against 1; abstain 2

824 Planning Requirements for 1990 Meetings

The JOIDES Office prepared the following as a basis for PCOM discussion and decisions.

1. Spring meeting

- Review of procedures involving PCOM, JOIDES Office, thematic panels and DPGs.

The main purpose of the 24-26 April meeting is for PCOM to decide the general direction of the vessel for the 4-year period to spring 1994.

Therefore by 10 April PCOM members must receive in their Agenda briefing books annotated lists by each of the four thematic panels of their current ranking of programs.

Therefore by 3 April the JOIDES Office must receive the lists from the thematic panels.

Therefore in winter no later than mid-March the thematic panels will have had to (a) review new as well as appropriate older proposals from

any ocean, in terms of published thematic objectives and the probability of actual drilling (related to the scientific and technical maturity of a proposal, including existing or anticipated surveys, engineering developments, safety, and perhaps other factors), (b) assemble the thematically acceptable proposals into programs, (c) rank and list the programs, and (d) briefly annotate each program with its thematic objectives and other appropriate comments to guide PCOM.

At their late winter meetings, thematic panels will also have the opportunity for panel-wide comments of the November 1989 updated CEPAC-DPG prospectus.

- Is this satisfactory and clear? * Does PCOM want to adjust any part?

2. Summer meeting

- Agreement on procedures involving PCOM and possibly other parts of the JOIDES structure.

One important purpose of the 7-9 August meeting is preparation for the 1990 Annual Meeting at which the FY92 drilling program will be set.

Therefore PCOM should receive and discuss watch-dog reports, DPG reports, reports from the co-chairs of the liaison groups to other international geoscience programs and other information pertaining to possible candidate programs for FY92 drilling. Presumably, programs that might be in regions visited by the ship early in its 4-year general progress would be examined most closely, but even the potentially later ones must be discussed.

Therefore at its April meeting, as soon as PCOM sets the 4-year general direction, PCOM must assign its watch dogs for each highly ranked program likely to be a candidate in the 4-year period.

- Watch dogs: After considering carefully the purposes and dates of the various meetings it appears to the PCOM Chairman that reports of its own watch dogs are most needed at the August meeting. An exception is the set that should have been presented this morning (at this present meeting) to assist the evaluations of the candidate programs for easternmost Pacific drilling in FY91. Under routine business tomorrow, watch dogs of the former WPAC and CEPAC regions can up-date us on the status of those programs. If we are, however, pressed for time the PCOM Chairman will request that these be quite brief or even eliminated.

In the case of the April meeting it seems presumptuous to guess in advance that the weight of high-ranking programs will indeed be in the Pacific where we have watch dogs. The majority of our mature proposals are there; we have heard from our panels that many highly ranking themes can best be addressed in the Pacific; and through FY91 we will not

have completed a minimum of 18 months of scientific drilling in the CEPAC region. Nevertheless, in fairness we point out that our notice to the community was that the direction of the vessel after 1991 will be based on thematically reviewed proposals from any ocean, we will not have the annotated rankings of programs by panels until April, and almost certainly we will not have assigned watchdogs to all of the high-ranked programs.

Therefore the Chair recommends that April watch-dog reports be given late in the meeting, after the decisions about the 4-year general direction of the vessel.

The Chair also recommends, that in April after the 4-year decisions, watch dogs be assigned to all high-ranking candidate programs not already covered. All watch dogs should be prepared to report at the August meeting.

3. Annual Meeting

- Review of procedures involving PCOM, thematic panels, and other parts of the JOIDES structure.

One important purpose of the 26-29 November meeting is preparation of the Science Program (drilling plan) for the FY92 Program Plan.

Therefore PCOM members must receive within early November 1990 the equivalent of a "prospectus", with several candidate programs for FY92 presented in leg form with their objectives, thematic-panel comments and rankings, and wherever possible, their specific sites, drilling and logging times, and whatever else is needed for PCOM's evaluation and decision.

The prospectus should include programs (and perhaps a candidate engineering leg) totaling about 7 to 10 legs, from which 6 will be selected for FY92. The prospectus should have received thematic-panel review and comments before the November Annual Meeting.

Therefore PCOM (a) at this present meeting should decide how the prospectus will be prepared and what group or groups will be responsible to prepare it, and, (b) at its April meeting after knowing what the range of possible candidate programs will be, should establish and charge the group(s) to prepare it.

- Preparation of prospectus for 1990 Annual Meeting.

Some possibilities are:

If the general direction of the ship will be only in the Pacific in the early part of the 4-year period, CEPACDPG can be asked to prepare the prospectus. The DPG will need some augmentation (or proper replacement of retiring members) for such a task.

advantages: CEPACDPG exists; most of its prospectus is already up to date.

disadvantages: CEPACDPG not be well constituted for a 1992 theme-driven program. No preparation for the eventuality that sooner or later the ship will be elsewhere (Atlantic, Western Pacific, or wherever).

If the direction is outside or largely outside the Pacific, the CEPACDPG might be dissolved or inactivated, and an appropriate new DPG formed (perhaps with some transferred CEPAC personnel). Its title might be non-regional ("1990 DPG") or it could indicate the general direction that was selected (for example, "South Atlantic-Southern Ocean DPG").

advantage: By the proper rotation of personnel and periodic changes in title, this could become an open-ended, long-term DPG (corporate memory; efficiency, etc).

disadvantage: Difficult to have a single group of efficient size that would have the regional plus thematic expertise, and not be merely advocates of the members' own proposals. Generally difficult to assemble altruistic volunteers.

If there are mixed kinds of detailed planning, the JOIDES Office might assemble a prospectus. For example, collect within one volume (a) the reports of a number of program-specific DPGs that must be established, (b) the applicable parts of any existing prospectus, (c) appropriate panel and working-group reports, (d) and single-site legs like 504B that would need little additional attention. At the minimum, there are the proposals themselves and the notations with the thematic-panel rankings.

advantages: Truly detailed planning will mainly be performed by one-time DPG meetings of the most-competent persons. The JOIDES Office can have good knowledge at all times of the status of the various parts of the prospectus.

disadvantages. Unevenness of contributions. Additional workload on JOIDES Office (but summer is the lightest time)

Combinations of the above (CEPAC-DPG, other DPGs, direct thematic input, etc., assembled perhaps by a 1990 DPG or perhaps by JOIDES Office)..

advantage: Least effort

disadvantages: Lack of coordination; unevenness of contributions.

- * As a point for discussion and action, the Chair recommends that PCOM now adopt the concept that it will, before adjournment in April, establish, fill, and charge new DPGs appropriate for those programs needing detailed planning before the Annual Meeting. PCOM will also charge the JOIDES Office to prepare a prospectus for the highly ranked programs and general direction of the vessel for the early part of the 1990-1994 period.

- * For discussion purposes, the Chair presents but does not recommend the alternative: that PCOM now adopt the concept that it will, before adjournment in April, establish, fill, and charge a new DPG appropriate to prepare a prospectus for the highly ranked programs and general direction of the vessel for the early part of the 1990-1994 period.

Discussion

Leinen said that because of the heavy burden placed on the thematic panels, both to review proposals and to prepare global thematic rankings, the panels should have the option of extending their winter meetings to help them get their information in shape. Tucholke agreed that they may need more time to accomplish their tasks. Brass said that the 4 thematic panels must send PCOM in the fall a list of their top ranked programs. Moberly said that this number should not exceed 4 or 5. Austin said that this will translate into many legs of drilling. Leinen said that the number should remain small so that ODP drills the best programs.

Austin said that PCOM must appoint some DPGs at this meeting to plan for drilling at Cascadia and the EPR, and perhaps some working groups also need to be formed to establish directions for certain kinds of drilling such as accretionary prisms. von Rad said a workshop on conjugate passive margins is important. Moberly said that workshops might be the appropriate setting for establishing directions for future ODP drilling.

Kastner thought that it would be appropriate for the JOIDES Office to prepare a prospectus for the potential drilling programs. von Rad said that a prospectus is very important and thought that it should be prepared by a small panel. Batiza suggested that a DPG is the best way to get realistic programs in the prospectus. Moberly said that the DPG could be formed to meet only once to establish the prospectus for that year's PCOM Annual Meeting. Austin was concerned that these will appear to be regional panels. Moberly said that it is possible that the drilling might be in more than one ocean. Batiza said that the group should be multi-disciplinary and not regional in its scope. Rea said that staffing is critical and it is important to have regional expertise when putting together a prospectus. Another critical factor in putting together a prospectus is to have a limited number of good proposals.

The general consensus of PCOM was that after establishing the general 4-year direction for the *Resolution* at the Spring PCOM meeting, a DPG will be formed to prepare a prospectus for the next fiscal year of drilling. If the general direction is in the Pacific, then the nucleus of the DPG will be formed from the CEPAC-DPG with appropriate additions as necessary. If the direction is elsewhere, then an appropriate DPG will be formed. In either event, the prospectus should contain more programs than can be accommodated by 5 to 6 legs of drilling to ensure competition for the selection of the best drilling

programs. The DPG will have to meet in sufficient time for the thematic panels to review, comment, and make program-rankings of the prospectus at their fall meetings.

PCOM thanked Dave Rea, Bob Detrick and the members of their respective DPGs for their efforts during 1989.

Thursday, 30 November 1989

825 Meeting of Former IOP and Co-Chief Scientists

At the Annual Meeting in Miami last year, PCOM committed itself to a final meeting of the Indian Ocean Panel (IOP) and Indian Ocean Drilling Leg Co-Chief Scientists. The JOIDES Office failed to interest the last chair of the IOP to organize a meeting. At the Woods Hole meeting, a 5-person *ad hoc* Indian Ocean sub-committee (R. Duncan, R. Kidd, D. Rea, U. von Rad, J. Weissel) recommended and PCOM accepted the following suggestion for the convening of the meeting. The purpose of this meeting would be to: 1) discuss and synthesize the results of the nine-leg Indian Ocean Drilling Program in light of COSOD I objectives; 2) assess both the successes and short-falls of this drilling; 3) emphasize unexpected achievements; and 4) highlight the direction for future studies. A further purpose is to assemble synthesis and review papers for publication as a volume outside of ODP. Attendance at the meeting will include former IOP members, Indian Ocean Co-Chiefs and selected shipboard participants. The location and time of the meeting will probably be at the University of Cardiff (Wales) in June 1991, in conjunction with a planned meeting of UK Indian Ocean Participants, which will be hosted by R. Kidd. The format for the meeting will be limited summary talks and posters, plus draft manuscripts from participants, all organized along thematic lines. Participants will work on jointly authored papers on multi-leg subjects. These papers will be submitted to the conveners within 6 weeks of the end of the meeting. AGU will be contacted to publish the volume and asked to supply editorial and reviewing assistance. It is hoped that these publications can be done as part of a monograph series on Ocean Drilling. Funds for organizing the meeting, some editorial assistance, and for the travel of US participants will be sought from USSAC. Other member countries would have to support participation by their respective IOP panel members, Co-Chief Scientists, and any other participants.

Discussion

Austin thought this was a good idea for all the regional panels and suggested that the former Western Pacific Panel chairman B. Taylor be asked to start planning a similar meeting.

Kastner suggested that a summary of the meeting be prepared for EOS; Moberly suggested Geotimes and Episodes and Brass suggested Nature as well.

von Rad said that a 10 page overview of the drilling would be helpful for ODP as a whole.

Brass said it is time that ODP consider committing to a Monograph Series, and he will undertake exploration of this possibility with AGU. The publications can be along both thematic and regional topics.

Duncan said that for the IOP meeting, an editor for the volume will have to step forward. For the present, Duncan volunteered to be the point of contact for getting the meeting organized. He will supply a letter requesting the meeting and Moberly will approve the meeting. Other arrangements concerning funding will have to worked out with JOI/USSAC.

826 Resolution Regarding Soviet Participation in ODP

Because of concerns expressed previously about problems being caused for the non-US partners by the exclusion of the Soviets from ODP, a sub-committee consisting of Brass and von Rad volunteered to draft a resolution (see Minute 815). The following motion and resolution was approved.

PCOM Motion

PCOM adopts the following resolution. (Motion Brass, second Kastner)

Vote: for 16; against 0; abstain 0

PCOM Resolution

The JOIDES Planning Committee recommends scientific and technological goals for the Ocean Drilling Program and includes representatives from each of the international partners and the ten JOI Institutions. The Committee has recently learned that failure to permit the Soviet Union to participate in the Ocean Drilling Program has begun to cause difficulties for scientific cooperation in other non-ODP programs. Marine Science is inherently international and relies on the cooperation of many nations and access to territorial seas of great scientific interest. The unilateral US decision to deny ODP membership to the Soviet Union who participated effectively in the Deep Sea Drilling Program, the ODP predecessor, has involved the international ODP members without consultation and without their concurrence. In recent months the Soviet Union has indicated that their rejection by the program inhibits their desire to cooperate fully in other international programs. The ODP Planning Committee urgently recommends that an invitation to join the Ocean Drilling Program be extended to the Soviet Union early in 1990.

[The resolution was immediately forwarded by EXCOM Chairman Charles Helsley to Dr. Eric Bloch, Director of NSF, and to Dr. Allan Bromley, Assistant to the President for Science and Technology. A positive response has been received from Dr. Bromley. In his letter Bromley states that he agrees that it would be in the best interest of all concerned to have the USSR once again

participate fully in the drilling program and has communicated that conclusion to President Bush.]

827 Membership Changes on JOIDES Panels

PCOM has a general concern about ensuring that the JOIDES advisory structure is open to participation by all US Institutions. Therefore in the future PCOM admonishes all JOIDES panels to provide at least two nominees to cover each requested appointment and that these nominations should include "new blood". PCOM wants to see a balanced mixture of scientists in the advisory structure, including both scientists with experience in the Ocean Drilling Program and those that are new to the program. Membership on the various JOIDES panels was reviewed and the following actions were taken.

LITHP There were no requests for new members. A. Taira said that T. Fujii (Japan) will be going off the panel. LITHP should indicate what kind of expertise they would like, so that Japan can appoint an appropriate new member

OHP The panel had requested that a particular new member be appointed to replace both A. Droxler and member-at-large L. Mayer, with interests in both shallow-water carbonates and deep-ocean seismic stratigraphy. Because of concerns about appointment of a drilling proponent at this particular time, a decision was put off until the next PCOM meeting. A. Droxler and L. Mayer are asked to continue through the next meeting of OHP. The panel is requested to make more than one nomination to cover appointments in a particular expertise. Nominations of "new blood" are to be included in future requests. This applies to all panels. A. Taira said that T. Saito (Japan) will be going off the panel. Ken Konishi will probably be appointed (expertise in shallow-water carbonates).

SGPP Roger Flood is asked to join the panel to cover the area of deep-sea sedimentation. Jeff Alt is asked to join the panel to cover the area of crustal alteration. Martin Goldhaber is asked to continue his membership on SGPP for another year.

John Parkes of the Department of Geology, University of Bristol who conducted the microbiology experiment on the cores from Leg 128 will attend the next meeting of SGPP to discuss microbiology; Jenkyns said that his expenses will be covered by the UK.

M. Kastner suggested that the panel be allowed to have 16 members for one year, while it is still sorting out its mandate.

TECP Tanya Atwater is asked to join the panel to cover the area of plate kinematics. Casey Moore is asked to join the panel to cover the area of accretionary prisms.

DMP No action taken since the panel is still soliciting new nominations.

IHP No action taken. The appointment to IHP of two recent Co-Chief Scientists (a US and a non-US) was discussed. The Co-Chiefs would provide input to IHP on publication as well as other shipboard matters. This will be an Agenda Item for the next PCOM. Nominations of Co-Chiefs for this appointment are to be sought.

PPSP No requests and no actions taken.

SMP No requests and no actions taken. More visitors are needed to discuss problems with shipboard measurements.

SSP No requests and no actions taken. A. Taira said that K. Suyehiro (Japan) will be going off the panel.

TEDCOM Earl Shanks (Mobil) and Howard Shatto, Jr. (Consultant) are asked to join the panel.

PCOM Motion

PCOM accepts the slate of persons nominated to serve on panels. (Motion Kastner, second Weissel)

Vote: for 16; against 0; abstain 0

Confirmations of PCOM Liaisons to upcoming panel meetings are:

LITHP - Duncan or Natland	IHP - Watkins
OHP - Brass	PPSP - Moberly
SGPP - Brass	SMP - Leinen
TECP - Tucholke	SSP - Watkins
DMP - Cowan	TEDCOM - Brass

828 Liaison Groups With Other Global Geoscience Programs

EXCOM has accepted the JOI and PCOM proposal for the formation of Liaison Groups with other international geoscience programs with the proviso that PCOM and EXCOM members shall not be members of the liaison groups. When the Co-Chairs attend PCOM meetings they will be treated as guests and will have to leave the room when sensitive matters are discussed. Wording for the mandate and terms of reference for the groups was presented and the following motion was passed.

PCOM Motion

PCOM recommends and forwards to EXCOM for approval the following proposed mandate and terms of reference for Liaison Groups.

- 1.1 Liaison Groups may be established between JOIDES and other international geoscience programs having a strong interest in ocean drilling.
8. **Liaison Groups: Mandate.** As a formal means of communications, and especially to facilitate the exchange of beneficial information, JOIDES may establish a Liaison Group with any international geoscience program that has a strong interest in ocean drilling. Such groups may be approved by PCOM on the nomination by JOI, Inc. For each Group, typically a Co-Chairman and one additional member will be appointed by an international program to represent it, although with mutual consent the membership of a Group may be larger. PCOM and EXCOM members will not be members of Liaison Groups. Typically, Co-Chairmen will be invited to meet with PCOM at the summer PCOM meeting.

(Motion Brass, second Watkins)

Vote: for 12; against 0; abstain 4

A formal response has been received from Bob Ginsburg of the Global Sedimentary Geology Program (GSGP) agreeing to form a Liaison Group. Ginsburg has forwarded the names of three GSGP representatives for this liaison group (Erle Kauffman Co-Chairman; David Bottjer; Michael Arthur). PCOM approved the following JOIDES members for this Liaison Group: Tim Bralower Co-Chairman (Alternates: Dave Scholl, Wyllie Poag, Robert Garrison) and Judy McKenzie, of the ESF (Alternate: Jurgen Thurow, FRG).

Although a formal response has been received from RIDGE concerning the formation of a Liaison Group, PCOM did not nominate any members because RIDGE is not yet an international program. When RIDGE does become international, JOIDES members will be named.

829 Nominations For Co-Chief Scientists

PCOM recommended Co-Chief Scientists for the following drilling legs:

Eastern Equatorial Pacific Neogene Transect

- | | |
|-----------------|------------------------|
| US Co-Chief | 1. N. Piasias |
| | 2. A. Mix |
| | 3. M. Lyle |
| | 4. R. Embly |
| Non-US Co-Chief | 1. L. Mayer (C-A) |
| | 2. T. Pederson (C-A) |
| | 3. H. Beiersdorf (FRG) |

Hydrothermal Processes at Sedimented Ridge Crests

US Co-Chief 1. M. Mottl
 2. R. Zirenberg
 3. M. Langseth
 4. J. Morton

Non-US Co-Chief 1. E. Davis (C-A)
 2. F. Albarede (France)
 3. J. Cann (UK)
 4. H. Baecker (FRG)

PCOM adjures that a balance be maintained between the expertise of the Co-Chiefs such that if Davis is chosen, the ideal pairing would be with Mottl, Zirenberg or Morton. Similarly if Mottl is chosen the ideal pairing would be either Davis or Baecker.

Lower Crust at 504B

US Co-Chief 1. J. Alt
 2. H. Dick
 3. K. Becker
 4. J. Sinton
 5. S. Humphris
 6. M. Mottl

Non-US Co-Chief 1. J. Erzinger (FRG)
 2. J. Honnorez (France)
 3. H. Kinoshita (Japan)
 4. R. Emmerman (FRG)

PCOM adjures that a balance be maintained between the expertise of the Co-Chiefs.

East Pacific Rise Bare-Rock Drilling

US Co-Chief 1. C. Langmuir
 2. R. Detrick
 3. D. Fornari
 4. G. Thompson

Non-US Co-Chief 1. J. Francheteau (France)
 2. J. Cann (UK)
 2. R. Hékinian (France)
 3. J. Erzinger (FRG)
 4. F. Albarede (France)
 5. H. Bougault (France)

830 Formation of Cascadia and EPR Detailed Planning Groups

Based on the recommendations of various panels, PCOM established a Cascadia Accretionary Prism Detailed Planning Group and an East Pacific Rise Detailed Planning Group.

PCOM Motion

PCOM establishes a Cascadia Accretionary Prism Detailed Planning Group and an East Pacific Rise Detailed Planning Group. (Motion Brass, second Leinen)

Vote: for 15; against 0; abstain 0; absent 1

PCOM made the following nominations and mandates for the two DPGs.

Cascadia DPG

Non-Proponents

- L. Cathles (US) 1st Choice for Chairman
- G. Westbrook (UK) 2nd Choice for Chairman
- J. Behrmann (FRG)
- S. Dreiss (US)

Vancouver Proponents (3 of 4) to be chosen

- R. Hyndman (C-A)
- V. Wall (C-A) [Australian Alternate for Hyndman on FPAP, proponent?]
- B. Bornhold (C-A)
- C.J. Yorath (C-A)

Oregon Proponents (3 of 4) to be chosen

- V. Kulm (US)
- G. Moore (US)
- B. Carson (US)
- E. Sues (FRG)

PCOM Liaison: NEEDS TO BE APPOINTED

Only one member from the FRG should be appointed. Other non-US members may appoint members to the DPG if they wish, but it is suggested that they avoid proponents in order to maintain a balance.

Charge to the Cascadia DPG

The DPG is to examine the competing Cascadia Accretionary Prism drilling proposals and provide a prioritized plan for drilling. If the highest priorities cannot be accomplished in one leg, the DPG should make suggestions for later drilling.

[L. Cathles has accepted the chairmanship of the DPG. The proponents have recommended that the membership include the persons with the greatest overall knowledge of the scientific objectives and of the data. Thus the three

Vancouver proponents will be R. Hyndman, E. Davis, and M. Brandon, and the Oregon proponents will be V. Kulm, C. Moore and B. Carson.]

East Pacific Rise Bare Rock Drilling DPG

Non-Proponents

E. Davis (C-A) 1st Choice for Chairman
 P.J. Fox (US) 2nd Choice for Chairman
 J. Delaney (US)
 R. Von Herzen (US)
 ODP-TAMU Engineer (S. Howard suggested)

9°40' N Proponents

D. Fornari (US)
 K. Macdonald (US)

12°50' N Proponents

J. Francheteau (France)
 R. Hékinian (France)

PCOM Liaison: J. Natland

Other non-US members may appoint members to the DPG if they wish, but it is suggested that they avoid proponents in order to maintain a balance..

Charge to the East Pacific Rise DPG

The DPG is to choose which of the two active proposals for the two areas on the East Pacific Rise, at 9°40' N and 12°50' N, best meets the criteria established by the EPR Working Group. The DPG is then to fix the drilling template to the actual sites and prepare a drilling plan.

[E. Davis accepted the chairmanship of the DPG on the condition that a full-range of the necessary expertise be provided. Moberly has approved the following additions to the membership: K. Van Damm, non-proponent; M. Purdy, 9°40' N proponent; F. Albarede 12°50' N proponent. The DPG is scheduled to meet 5-7 April 1990 in Vancouver.]

PCOM Motion

PCOM accepts the slate of members and mandates suggested for the Cascadia Accretionary Prism Detailed Planning Group and East Pacific Rise Detailed Planning Group. (Motion Brass, second Watkins)

Vote: for 16; against 0; abstain 0

830 Miscellaneous Business**PCOM Motion**

PCOM adopts the following resolution. (Motion Watkins, second Kastner)
Vote: for 16; against 0; abstain 0

PCOM Resolution

The JOIDES Planning Committee receives with sadness the news of the death of F.G. Walton Smith, one of the founders of JOIDES and first Dean of the University of Miami's Rosenstiel School of Marine and Atmospheric Science. The Planning Committee extends their sympathies to Walton Smith's family, friends and colleagues.

The following statement was read into the Minutes by U. von Rad for consideration by PCOM and IHP:

PCOM is concerned about the fact that some of the recent Scientific Results volumes of the Proceedings of the Ocean Drilling Program will not contain synthesis chapters from the Co-Chief Scientists. Without these summary chapters a very important part of the most visible results of ODP will be lost to the general detriment of the program. It is therefore requested that TAMU urge Co-Chief Scientists to include summary papers and apply as much flexibility as possible (e.g. acceptance during the paste-up stage) to allow co-chiefs to write these papers after their editorial duties have been finished, with the provision that the accepted publication deadlines are not compromised.

This topic will be an Agenda Item at the next PCOM meeting.

831 Future Meeting Schedule

The next meeting will be the 1990 Spring PCOM meeting to be held in Paris France from 24-26 April, 1990. A two-day field trip down the Rhone Valley is planned to follow the meeting.

The 1990 Summer PCOM meeting will be hosted by Scripps in La Jolla from 14-16 August 1990. There will not be a joint meeting of US PCOM members with USSAC.

The 1990 Annual PCOM meeting will be hosted by the Hawaii Institute of Geophysics in Kailua-Kona, Hawaii from 28 November to 1 December 1990. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 27 November. A field trip is possible if there is sufficient interest.

The 1991 Spring PCOM meeting will be hosted by the University of Texas at the Thompson Conference Center on the Austin campus from 23-25 April 1991.

The 1991 Summer PCOM meeting will be hosted by the FRG in Hannover from 20-22 August 1991. There will be a field trip after the meeting.

The 1991 Annual PCOM meeting will be hosted by the University of Rhode Island from 4-7 December 1991. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 3 December.

832 Conclusion of the Meeting

The Planning Committee thanked Brian Tucholke for his efforts towards making this meeting both productive and enjoyable. Thanks were also forwarded to the Director, Craig Dorman, as well as Janet Johnson and others at Woods Hole Oceanographic Institution.

This was the last meeting for Miriam Kastner since she is stepping down from PCOM. The Planning Committee expressed its appreciation of her efforts on the behalf of ODP by acclamation.

The 1989 PCOM Annual Meeting adjourned at 2:00 PM.

JOIDES PLANNING COMMITTEE SPRING MEETING
24-26 April 1990
Société Géologique de France
Paris, France

DRAFT MINUTES

Members:

J. Austin - University of Texas at Austin
G. Brass - University of Miami
M. Cita-Sironi - Università d'Milano, ESF Consortium
D. Cowan - University of Washington
R. Duncan - Oregon State University
H. Jenkyns - Oxford University, United Kingdom
Y. Lancelot - Université Pierre et Marie Curie, France
M. Langseth - Lamont-Doherty Geological Observatory
M. Leinen - University of Rhode Island
J. Malpas - Memorial University, Canada-Australia Consortium
R. Moberly (Chairman) - Hawaii Institute of Geophysics
J. Natland - Scripps Institution of Oceanography
K. Suyehiro - Ocean Research Institute, Japan (alternate for A. Taira)
B. Tucholke - Woods Hole Oceanographic Institution
U. von Rad - BGR, Federal Republic of Germany
J. Watkins - Texas A&M University

Liaisons:

L. Garrison - Science Operator (ODP-TAMU)
R. Jarrard - Wireline Logging Services (ODP-LDGO)
E. Kappel - Joint Oceanographic Institutions, Inc. (alt. for T. Pyle)
B. Malfait - National Science Foundation

Guests and Observers:

J. Backman - University of Stockholm, Sweden
P. Blum - future Executive Assistant and Non-US Liaison
M. Cheminee - Université Pierre et Marie Curie, France
A. Crawford - University of Tasmania, Australia
A. Meyer - Science Operator (ODP-TAMU)
K. Pisciotto - British Petroleum Exploration, UK
C. Sparks - Institut Français du Pétrole
M. Storms - ODP-TAMU Engineering

JOIDES Planning Office:

H. Iwamura - Secretary
L. d'Ozouville - Executive Assistant and Non-US Liaison
G. Waggoner - Science Coordinator

Tuesday, 24 April 1990

833 Introduction

PCOM Chairman Ralph Moberly called the 1990 Spring Meeting of the JOIDES Planning Committee to order. Yves Lancelot welcomed everyone to Paris. Lancelot explained logistics including a reception at the Université Pierre et Marie Curie. Moberly welcomed new PCOM member Jim Natland and PCOM alternate Kiyoshi Suyehiro standing-in for A. Taira. Introductions were then made around the table.

834 Minutes of 27-30 November 1989 Annual PCOM Meeting

Moberly called for comments, corrections and approval of the previous minutes. There were no further corrections to the draft minutes.

PCOM Motion

PCOM approves the minutes of the 27-30 November 1989 Planning Committee meeting. (Motion Brass, second Natland)

Vote: for 15; against 0; abstain 0; absent 1

835 Approval of Agenda

Moberly called for additions or revisions, and then for adoption of the agenda for the meeting. Several minor additions and modifications were requested in the Agenda.

PCOM Motion

PCOM adopts the agenda for the 24-26 April 1990 Planning Committee meeting with amendments. (Motion Tucholke, second Brass)

Vote: for 15; against 0; abstain 0; absent 1

836 ODP Reports By Liaisons to PCOM

EXCOM

EXCOM has not met since the last PCOM meeting in November. R. Moberly reported that Peter Blum will be the next non-US Liaison, in the JOIDES Office at the University of Texas at Austin.

NSF

B. Malfait reported that the 1990 budget was announced in mid-January. Overall, NSF received an 8% increase with the biggest increase going to Education. The Antarctic program also had a major increase, in part for a new icebreaking research vessel. Geoscience programs had a 5% increase overall, with most going to Earth Sciences. Ocean sciences had a 1% increase and Ocean Drilling got about a 2% increase. Global change programs such as WOCE, JGOFS, and RIDGE got most of the increase. Overall, shipboard support is down. Looking ahead to 1991, Geosciences is requesting an 18%

increase mainly for Global Change Programs. The request for Ocean Sciences is around 16% and includes a 9% increase for Ocean Drilling.

The FY90 budget for Ocean Drilling was approved in late December at \$38M, with \$21.5M from NSF and \$16.5M from the international partners. The FY91 budget had a target of \$39.3M with a supplement of \$0.3M for additional new technology. There has been a reduction of the administrative costs charged by JOI to ODP. After administrative review of the 1991 draft plan, NSF has advised JOI of a final target of \$39.6M for the 1991 budget.

US ODP Science Program news items included: there has been an increase in proposals for downhole instrumentation for both the *JOIDES Resolution* and by wire-line reentry; a shallow-water drilling program in the Bahamas with Bob Ginsburg as PI is being jointly supported by Ocean Sciences and MG&G programs; NSF ODP Field Programs that are upcoming are: near-bottom refraction of the EPR around 9°N by Purdy, MCS study of US East Coast margin by Miller, Christie-Blick and Mountain in May 1990 on the *Ewing*, MCS study of the Antarctic peninsula by Dalziel and Hayes scheduled for January 1991 on the *Ewing*, Deep-tow study of the Kane Transform by Delaney and Spiess scheduled for early in 1991 on the *Melville* in a joint project with French scientists.

Other items discussed were: the possibility of Soviet participation is being re-examined by the US administration; in March the National Science Board got a briefing on the status and scientific results of ODP; the US Continental Drilling Office (DOSECC) has moved to Texas A&M and joint funds will be used to support an engineer working for both ODP-TAMU and DOSECC; an Index to DSDP volumes is in the final stages of preparation and will most likely be published in hard copy with an accompanying CD-ROM; two positions in the NSF Ocean Drilling program are going to be advertised.

Discussion

Cowan asked what percentage of proposals for field programs are getting funded. Malfait said that less than 50% get funding. Moberly said that any percentage near 50 is an improvement over the previous level of around 24% funding.

von Rad wanted to know what other responses had been received on USSR participation besides the one from the Science Advisor to the President. Malfait said that there have been expressions of concern over USSR participation by some other segments of the government related to technology transfer.

JOI

E. Kappel discussed the status of the FY91 program plan and budget after the BCOM meeting in March. The target budget of \$39.3M is less than the \$40M

predicted in the 4-year program plan as necessary to continue technology development. Continued development has been possible due to fortunate circumstances, including constant day-rates, which have saved about \$1M, and reduction of indirect costs at JOI by around \$400K. BCOM had suggested that an additional \$450K be requested for cooperation with Sandia to develop and build two sets of high-temperature slimline tools. JOI is interested in knowing if other groups could compete with Sandia to supply these slimline tools in time for the upcoming drilling legs. A second set of tools does not appear to be possible in next year's budget. The Micro-paleontological Reference Center bids are due at the JOI Office and it appears that it will require about \$70K for two years. Special Operating Expenses in the FY91 budget (Appendix A) include: \$843K for continued development of the Diamond Coring System; \$172K for publication of 4 additional *Proceedings* volumes; \$450K for replacement of exceptionally high losses of drilling supplies; \$180K for dewarring of slimline tools donated by ARCO; \$46K for shipboard FMS processing; \$30 K for CONOCO consortium fee; plus some miscellaneous other equipment purchases.

Actions related to ODP renewal efforts have included: well-received presentations by R. Corell, J. Baker, W. Ruddiman, P. Fryer, P. Worthington and N. Pisiias to the National Science Board; Long Range Plan has been sent to the printer and the complete portfolio will be available by the June EXCOM meeting. 3000 copies of the LRP will be printed and will get distributed to JOIDES Journal recipients and 100 copies to each ODP Office of the non-US partners. The portfolio will consist of the LRP, a layperson brochure and a member-country brochure.

Coordination with other International Geoscience Programs is progressing. PCOM has formally named JOIDES members to the GSGP Liaison Group and provisionally to FDSN. A positive response has been received from the Nansen Arctic Drilling Program. Discussions have begun with: RIDGE/InterRIDGE which will have an international meeting in Brest on 12-14 June; International Geosphere/Biosphere Program; US Continental Scientific Drilling Program, FRG KTB; Italy ENEL/UNG. More effort is needed with such other continental drilling and geothermal programs as Geol. Prof. de la France, UK Geothermal-hot dry rock, Japan, USSR, Sweden etc. PCOM needs to consider drilling holes in cooperation with these other programs; the pilot hole north of Oahu for FDSN would show a strong commitment to this kind of cooperation which will strengthen ODP.

Discussion

Leinen asked why no letter had been written to the International JGOFS Office. JGOFS is very interested in cooperation in the Eastern Equatorial Pacific Neogene Transect Leg. Kappel said that JOI would write JGOFS.

Cita agreed that PCOM needs to give a high priority to cooperation and make a commitment to drill a hole such as the Oahu pilot hole.

Tucholke said that he is concerned that there was no competition for the funds for the high-temperature slimline tools. Garrison said that the problem was the limited period of time before the tools are needed; there was the need for a supplier that could provide instruments in a timely fashion. Moberly said that Sandia has invested a lot of money in developing high-temperature logging tools, allowing for a quick response. Malfait said that because co-mingled funds are being used, the competition should be open to the international partners. Kappel said that JOI is aware that there should be both open competition and international competition for these funds, but to issue an RFP would take time and the drilling is coming up very soon. Kappel asked if any PCOM member and especially the non-US partners know of someone who could provide the high-temperature slimline tools in a timely fashion; if so, they should let JOI know.

Science Operator

L. Garrison reported on the current drilling on Leg 131 at the Nankai Trough. At Site 808 (NKT-2) the predicted turbidites were encountered during drilling. The A-hole was drilled to 112 mbsf but the pipe became stuck and after packing off the BHA was lost at 83 mbsf. The B-hole was XCB cored to 359 mbsf and before the RCB change-over it was decided to log the hole. During the logging operations, logging tools including a radioactive source were lost. For the C-hole, the drill-in casing system developed for Leg 110 was tried and the hole was cased from 14 to 105 mbsf. Further drilling with the RCB is approaching the décollement at about 1000 mbsf. Bad weather and strong currents have hampered operations at this site. The LAST tool has not worked well.

A. Meyer reported on Leg 130 on the Ontong Java Plateau. This was a very successful leg, with 4822 m of core recovered from 5 sites. In the Neogene transect, OJP-6 was substituted for OJP-3 based on the results of drilling at the previous site (803, OJP-4). Drilling at Sites 803 and 807 recovered basement, with about 150 m recovered at 807. There was a successful airdrop of the multi-shot orientation device that was flown from Ponape.

J. Backman commented that a textbook stratigraphy was recovered, which included K/T boundaries at two sites. Some shipboard scientists were uneasy by what were viewed as two competing programs. Cita said that based on the results, the decisions made onboard appear to have been good. The leg was clearly successful as a multiple objective leg which has provided abundant core for everyone to study. Leinen said that any problems caused by arguments over the objectives of the leg were the results of PCOM decisions and PCOM needs to be more careful in defining these objectives in the future.

L. Garrison next presented some minor changes in the ODP Operations Schedule. The port for the end of the NE Australia Leg and the beginning of Vanuatu Leg is now Townsville rather than Brisbane and the dates are 11-15 October. The Vanuatu Leg has had 6 days added as a result of Safety Panel considerations, and is now 62 days long. The port dates in Suva have been changed to 17-21 December.

A. Meyer discussed the staffing of legs. Co-Chief Scientists have been named for Sedimented Ridges 1 (E. Davis and M. Mottl) and for Eastern Equatorial Pacific Neogene Transect (L. Mayer and N. Pias). Staffing is almost complete for Legs 133-135 with the exception of some non-US partners. Leg 137 and 138 will be staffed in June. Meyer presented the tally of shipboard participants through Leg 130 (Appendix B).

Since the November PCOM meeting, 7 *Proceedings* volumes have been published (Appendix B). The "Scientific Results" through Leg 107 are out and by the end of FY90, the "Scientific Results" through Leg 116 and "Initial Reports" through Leg 128 are expected to be published. It is now taking from 37-40 months post-cruise for the "Scientific Results" to appear and this should decrease to 33 months post-cruise by next year (Appendix B). The initial meeting at 3-4 months post-cruise of the essential part of the shipboard party for Legs 125-128 has worked well. The first 12-month post-cruise meeting will be for Leg 125 around the end of May.

Malfait asked what the optimum number of persons was for the initial meeting at 3-4 months post-cruise. Meyer said that the Co-Chief Review Meeting suggested that one from each critical discipline is needed, so that means 7-8 persons. Austin asked if this meeting had to be held at TAMU. Meyer said that TAMU is where the information needed for the "Initial Reports" is most readily available and therefore the meeting should be held there.

Duncan asked if the problems with publications illustrated by the letter from W. Prell in the Agenda Book were representative. Meyer said that it was typical of the problems caused by lack of communication and the necessity to set deadlines before getting a response from individuals. A compromise deadline has now been set for May which should allow the manuscripts to get finished. Duncan asked if many synthesis papers get delayed because of the slow submission of other manuscripts. Meyer said that under the new system of meetings, draft manuscripts should be brought to the post-cruise meeting and the Co-Chiefs can begin writing their synthesis papers based on these drafts.

Meyer distributed the recommendations from the Fifth Annual Co-Chief Scientists' Review Meeting held in March and emphasized items of concerns for PCOM. Meyer said that there were two recommendations about Science Operations which are related to PCOM: better scientific justification for

logging recommendations by DMP; and liaisons from relevant thematic panels to the pre-cruise meeting. Recommendations about scientific equipment and procedures included two workshops, one of paleomagnetists and the other of physical properties specialists, to make suggestions for improvements in shipboard facilities. There is also a recommendation that the multi-shot orientation tool be run in all APC holes for reversal stratigraphies. Under curation recommendations, the Co-Chiefs suggested that the master sampling report produced at the end of the cruise be augmented to include information about what scientific studies will be done and what must be completed to fulfil cruise obligations. Publications recommendations include one that the initial post-cruise meeting should include at least one person from each discipline "critical" to the cruise objectives.

Brass was concerned that having only liaisons from the relevant thematic panels might lead to confusion over the priorities of various objectives; PCOM should be balancing the objectives from the various panels and integrating them into multiple-objective legs. Meyer said that the Co-Chiefs said that they would like to have a better knowledge of the background for the leg priorities, this could come from PCOM or its representatives. Lancelot said that PCOM as a body does not generally look at proposals and therefore it would be better to have the experts giving advice at the pre-cruise meeting. This is especially true since the cruise prospectus is being used as a legalistic document and requires details about cruise objectives. Brass said that members of PCOM, especially watchdogs, do read the proposals and minutes of thematic panel meetings. PCOM synthesizes the information and balances the various objectives on multiple-objective legs. Natland said that from experience as a former WPAC member, regional panels integrate information when preparing their prospectus. Austin said that as recommendation #5 states, invite proponents to be Co-Chiefs, if this is not done someone needs to distil the minutes. Moberly reminded PCOM that the Science Plan, approved at the Annual Meeting and written by the JOIDES Office, is a distillation of science advice from panels and PCOM.

Austin agreed with recommendation #3 that wider and more timely distribution of short summaries of upcoming legs is needed; these should appear as soon as possible after PCOM schedules the legs. Leinen suggested that this be taken up with AGU for publication as a periodic information item in EOS, as is done for some other programs. von Rad said that a one-page summary would be helpful for keeping a wider community informed. Brass and Cowan agreed that this was an important item. Meyer said that in terms of staffing of a leg, this information needs to be out about 12 months in advance of the leg.

Lancelot said that as a recent Co-Chief, he thought that the paleomagnetist workshop was an important item for consideration. Moberly said that the

easiest way to handle this item is to invite some appropriate guests to a SMP meeting and to have some time put aside for discussing the problems and possible solutions.

Langseth said that he was concerned about the statement regarding DMP needing further scientific justification for their logging recommendations. Further discussion on items from the Co-Chief meeting was deferred until the reports of the panel meetings.

Meyer reported that since funds have been made available, the production of a CD-ROM containing ODP data is now underway. NGDC will be developing the software, which is the most expensive part of the process, for producing the ODP CD-ROM. The plans are to take a "snapshot" of the ODP data at the time of production of the master, later "snapshots" will be used to remaster the CD-ROM as more data accumulates. Lancelot asked when the CD-ROM that is accessible by the Macs will be ready. Kappel said that this is still at least 5 months down the road. Meyer said that the ODP CD-ROM should be Mac accessible.

The West Coast Repository at Scripps is being relocated to a new building, so that ODP cores will now be housed in one location. Based on an IHP recommendation, Job Descriptions are now mailed with the letters of invitation, which spell out the time requirements and duties of the particular position.

Austin asked if there was any attempts being made to keep the size of the science party down. Meyer said that this was being attempted.

Wireline Logging Services

R. Jarrard presented the Wireline Logging Services report for the Lamont Borehole Research Group. He discussed logging results from Legs 129 and 130 (Appendix C). Leg 129 had only modest logging plans to begin with and problems with the logging cable resulted in even less logging than anticipated. The seismometer experiment on Leg 128 used several kilometers of cable which was to be replaced, however, due to problems with the Japanese Export Agency, the cable was not allowed to go onboard the *Resolution*. This resulted in a splice at the end of the cable and the inability to use the SES. After a tool got stuck and the cutter and crimper misfired near the middle of the cable, the likelihood of successful further logging with that cable decreased significantly. Therefore the lower interval of Hole 801C could not be confidently logged and the decision not to log was made in consultation with the Schlumberger logging engineer, BRG, PCOM Chairman and the Science Operator. The new logging cable did arrive for Leg 130 and logging was efficient on this leg. Post-cruise processing of the logging data has revealed identifiable Milankovich cycles in Leg 129 and Leg 130 records, which can be used for sedimentation rate studies (Appendix C). One of the

primary logging objectives on Leg 130 was to help with correlation between Sites 586 and 806 and the logging is complete enough to allow compilation into a continuous stack (Appendix C). The FMS data in the basement allows identification of pillows and will allow core orientation. Processed FMS data from Leg 126 has been used to orient cores and identify rotation of the Philippine Plate using the dip direction (Appendix C).

On Leg 131 at Nankai, a \$200K tool string was lost when the pipe was dropped onto the tool string due to a SEDCO driller error related to inexperience of the drill crew. There may be some problem with backup supplies due to loss of the swivel. BRG is looking into a resupply by a small boat. The wireline packer was modified up to the last minute, but was ready for use on the leg in either perforated casing or in the open hole. The wireline packer can be used in the open hole only if the caving rate is low, otherwise there is the danger that too much material will pile up on the tool and get it stuck.

Looking ahead to milestones expected for downhole measurements over the next 12 months: the wireline packer will probably be used on the Nankai and NE Australia legs; some slimhole logging techniques will be tested on the Engineering 2 leg, the new SES will be used on the NE Australia leg, which will also include shipboard FMS processing; the German digital televiewer will be used on the Vanuatu leg as well as a trial of the French magnetic-reversal stratigraphy tool; the Sandia high temperature and fluids tool will be tested on Engineering 3; cooling by circulation will be tested on the Sedimented Ridges leg.

Discussion

Brass asked if the Custer temperature tool had been considered. Langseth said that temperatures would have to be less than 350°C for that tool. Garrison said that Sandia will be lending both a memory tool and an active temperature tool. Tucholke asked if the fluid sampler was from Sandia or Los Alamos. Jarrard said it was Los Alamos. Langseth asked if there would be a seal for the holes. Storms said that ODP would have a basic seal ready to be deployed, but it may not have the sensor package.

Langseth asked if there was a better hope of success at Cascadia for the geotechnical tools that were anticipated to work on the Nankai leg. Jarrard said that one problem was that technology development took longer than anticipated and the other was hole conditions at Nankai have been worse than expected. Lancelot said that the problems caused by sands at Nankai were not unexpected and the leg was planned knowing that this could cause problems. Brass echoed this and said the leg was proceeding as planned. Langseth said that PCOM should be more realistic about tool development. Moberly said that PCOM discussed the risks and both took some advice and ignored other advice from panels; the decision was to stay at the edge of technology development in order to advance the program. Leinen agreed

that being at the edge of technology was needed, but the ability to drill and maintain a hole in the expected sand-rich environment was not adequately addressed during the planning of the leg. Garrison said that the use of the drill-in casing was successful in establishing a hole and some geotechnical measurements can be made with the wireline packer and LAST tool.

837 Reports By PCOM Liaisons

LITHP

Liaison R. Duncan reported on the 5-7 March 1990 meeting of LITHP, which was held jointly with TECP. An important question that arose during the ranking of programs was, what constitutes a proposal for consideration in the 4-year plan, since there is a range from letters to fully mature and developed proposals. LITHP decided that in their rankings all proposals within a theme would be considered as potential programs. LITHP spent considerable time discussing Engineering 3 at 504B and the EPR. At 504B, LITHP recommends a 3-day logging program before the attempt to clean the hole by fishing and milling. If the hole is cleaned, LITHP recommends that it be deepened as much as possible with the remaining time and therefore a small scientific staff be onboard the *Resolution*. At the EPR, LITHP recommends that two sites be established with about 50 m of basement penetration and that a modest science party be on hand.

During the joint session, deep drilling was discussed and LITHP recommended the establishment of a task force to consider how best to approach drilling deep holes in oceanic environments, since it does not appear to be feasible to drill a hole deeper than 1.5 to 2 km at this time. ODP could help sow the seeds for a future deep drilling program. LITHP along with TECP recommended the formation of a Volcanic Margins Working Group and suggested a slate of names for consideration. The lack of combining petrologic and tectonic objectives during zero-age crust drilling was jointly discussed and there will be efforts to combine the two in future drilling programs. During the joint session there was a presentation by M. Purdy about the Ocean Bottom Seismic Station pilot hole north of Oahu and both LITHP and TECP endorsed drilling this hole.

Discussion

Natland said that Susan Humphris has been unanimously nominated to be the next LITHP chairman.

von Rad asked why LITHP recommended that the Lau Basin Working Group be asked to look at the proposal for drilling ore deposits in the back-arc since the Working Group no longer exists. Natland said that LITHP thought that the proposal deserved consideration as a back-up site. Further discussion was deferred until Minute 850.

OHP

Liaison G. Brass reported on the 29-31 March 1990 meeting of OHP, which spent most of its time reviewing proposals and ranking programs. OHP discussed the present publication targets and the impact on synthesis chapters and content of the volumes. OHP generally endorsed the schedule with several concerns about about delays caused by the editorial process and getting important data included in the volumes. OHP also spent time discussing the addition of personnel to the panel. OHP expressed concerns about the ability to recover organic-rich sediments on the continental margins that are important for paleo-productivity studies but which may be excluded from drilling by safety considerations.

Discussion

Garrison asked about the importance of the organic rich sediment drilling. Brass said that it is very important for understanding the carbon cycle and will probably require drilling in deeper and more risky environments as well as gas hydrates. Both OHP and SGPP probably need to send liaisons to PPSP to discuss these issues since they address fundamental science.

SGPP

Liaison G. Brass reported on the 14-16 January 1990 meeting of SGPP, which followed the USSAC Geochemistry workshop. The main focus of the meeting was the reviewing of proposals and ranking of programs for the 4-year plan. SGPP also worked on another revision of their white paper and position papers on technology and sampling issues. J. Parkes also presented a preliminary report on the biological activity experiments conducted on cores from Leg 128. T. Pettigrew presented information on the pressure core barrel and SGPP discussed what features would be desirable. SGPP questioned the necessity of routinely collecting and freezing whole-round core samples for future organic geochemistry studies. They suggest that a study be made of the numbers and kinds of research programs done with these cores.

Discussion

von Rad asked why names have been suggested by several panels for a Sealevel Working Group, when PCOM has not formed one. Moberly said that this was done in anticipation of a PCOM action, which PCOM said would follow and be based on the report from the sealevel workshop. Watkins said that the El Paso Workshop Report will be coming out very soon.

TECP

Liaison B. Tucholke reported on the 5-7 March 1990 meeting of TECP, which was held jointly with LITHP. TECP did a thorough job of looking at all the

ODP proposals in order to see which new and old proposals had TECP interests in them. TECP would like to see more documentation about the structural settings of proposals when it is relevant to the objectives. The Chile Triple Junction still remains the top program for TECP, although there is some concern over the location of specific sites. During the joint session with LITHP, the tectonics of mid-ocean ridges was discussed. TECP is concerned that there has not been an appropriate consideration of what tectonic objectives can be addressed by MOR drilling. E. Moores will be preparing a position paper for TECP on MOR tectonic objectives. TECP and LITHP recommended the formation of a Volcanic Margins Working Group. TECP emphasizes that stress measurements in holes of opportunity are important objectives for understanding fundamental geodynamic processes.

Discussion

Natland thought that better guidelines for preparation of proposals need to be formulated so that there is integration of proposals into stronger programs.

Brass asked how TECP would measure stress. Tucholke said that orientation of breakouts in basement holes is the current method; TECP is trying to encourage the integration of these measurements with other programs in holes drilled into basement.

DMP

Liaison M. Langseth reported on the 23-24 January 1990 meeting of DMP. The meeting was held at TAMU and the panel was able to examine the new SES and discuss its operation. DMP was concerned that PCOM had not specifically endorsed its recommendations at the November meeting. Langseth went over the 17 recommendations given in the Executive Summary of the DMP minutes. Moberly pointed out that PCOM does take the advice of its panels under consideration but does not always make specific endorsements of them. Many of the recommendations of DMP involve budget items for the subcontractors and have to be worked out by them, JOI, and the Budget Committee. ODP is putting an effort into developing high-temperature logging tools now that these legs have been put into the schedule. Funds have been shifted to start developing the tools as soon as possible. T. Pyle has undertaken to help coordinate interprogram tool development. The decision not to log the lower section at Site 801C was discussed previously by R. Jarrard during his presentation and needed no further justification. Langseth said he was concerned that reaming of the 4-inch DCS hole to a 6-inch size compatible with the present suite of logging tools is not receiving enough attention from ODP-TAMU. Discussion of the logging at 504B was put off until after discussion of the Engineering leg in Minute 846.

Discussion

Jarrard asked when the reaming option will be tested. Storms said that it might be possible to test this on the upcoming Engineering leg, but he does not consider it a promising option. Natland said that if the DCS works it may be used at many sites, including use as a mini-riser system, therefore slimline logging tools will be needed. Lancelot said that this was considered before and the ODP budget could not cover the costs of developing new slimline tools. Brass said that the major problem was developing slimline tools for hot environments, suites of slimline tools exist for normal hole conditions. Jarrard said that there is some hope of modifying a small number of tools for hot conditions but at great expense. Leinen said that further discussion should wait until after the Engineering Leg when there will be new information. Lancelot said that since logging is so important to the future of the program, this discussion should be taken up again when there is more time and new data to examine.

IHP

Liaison J. Watkins reported on the 7-9 March 1990 meeting of IHP. The panel has made a number of suggestions concerning problems pertaining to publication of the "Scientific Results" volumes including: enforcing deadlines; keeping Editorial Review Boards; having the staff scientist act as an on-site expeditor for the volume; appoint an additional outside ERB member at the request of the ERB chairman to lessen the load. IHP also reviewed the DSDP printed index and recommended that it be published. IHP will review the ODP indexing of volumes and make suggestions. IHP has made suggestions for what kinds of data should be included in the ODP data base. IHP recommends that a second systems manager be put on the *Resolution*.

Discussion

Lancelot asked if the expense to publish the DSDP Index would be small. Meyer said that it would be. Malfait said that there were questions about the utility of the Index in printed form and said that an attempt would be made to put it on a CD-ROM using money outside of ODP.

von Rad asked what was being done to ensure that the Co-Chief synthesis papers would be included in the "Scientific Results" volumes. Watkins said that IHP thought that it was important to have them included and their suggested changes are designed to lighten the load on the Co-Chiefs for this purpose.

PPSP

Liaison R. Moberly reported on the 27-28 February 1990 meeting of PPSP. Sites for legs 132 (Engineering II), 133 (Northeast Australian Margin), and 134

(Vanuatu) were approved. Some of the sites for Legs 133 and 134 were adjusted slightly for safety considerations. On Leg 133 special care in monitoring will be demanded on several sites, especially those along the edge of the Townsville Trough. Both Co-Chief Scientists, an additional geophysicist, and the organic geochemist for Leg 133 were present at the meeting; engineers were present for 132 and both Co-Chiefs for 134.

After a review of hydrocarbon shows in the Sea of Japan on Legs 128 and 129, PPSP and guests began a discussion of current trends of monitoring techniques and equipment. They also had a further discussion of clathrates, and held a discussion of factors in the safety of drilling virgin but potentially hydrocarbon-bearing basins of continental margins. A subcommittee of organic geochemists is to develop expanded guidelines for monitoring gas shows and to draft revisions of PPSP policy on gas hydrates. Their report, and a final one on the Exmouth Plateau drilling, will be presented at the next PPSP meeting.

SMP

Liaison M. Leinen reported on the 20-21 March 1990 meeting of SMP. No minutes were available from the meeting. The decision of SMP is that No Radioactive or Enriched Stable Isotope Reagents be allowed onboard the *Resolution*. Requests for exceptions should be channeled through the thematic panels for justification and passed to SMP for action. Operation SWAB found that the *Resolution* is presently free of contamination. The test of the high-speed streamer was not optimal, but did not indicate any improvement in the records. The opinion of the geophysicists is that the ODP streamer data is not that bad. The system for digital recording of the Visual Core Description (VCD) was examined and judged to be "awesome". The system is flexible and should improve the quality of the VCD. Computer capture of color core descriptions was also demonstrated by R. Merrill. SMP still recommends the purchase of a real-time GPS data monitor and a sulfur coulometer. SMP requests a workshop of paleomagnetists and physical-properties specialists to suggest improvements for the labs and procedures on the *Resolution*.

Discussion

Jenkyns asked about how the exceptions to the rule about no radioisotopes would be handled. Leinen said that the mechanisms have yet to be formulated. Brass said that this needs careful consideration because of the potential conflicts between panels; what may be scientifically desirable for one panel may be a disaster for another.

SSP

Liaison J. Watkins reported on the 9-10 April 1990 meeting of SSP. The panel has examined the complete data package from Leg 136, Engineering 3, and recommends completion of the planned near-bottom seismic study, in order to assess the thickness of the rubble zone, before placement of the guidebases at the EPR. For Leg 137, Sedimented Ridges, all data requested by SSP are now in hand. SSP recommends the collection of near-bottom side-scan data in the Escanaba Trough. For Leg 138, Eastern Equatorial Pacific Neogene Transect, the data are in hand although proponents are refining seismic data with further processing. Regional data packages are now considered generally adequate for Chile Triple Junction, Cascadia, Atolls and Guyots, North Pacific Neogene and Bering Sea, but SSP has specific recommendations for desirable improvements. SSP will do a final review of Chile Triple Junction when site locations are refined. A July meeting is planned to examine programs in the 4-year track more carefully.

TEDCOM

Liaison J. Natland and TEDCOM chairman C. Sparks reported on the 13-14 February 1990 meeting of TEDCOM. The committee discussed the continued development of the 4500-meter version of the DCS, and inspected the DCS in the contractor's yard. Representatives of the thematic panels presented their technological objectives, especially with respect to deep drilling and the recovery of undisturbed cores in unconsolidated sediment. TEDCOM is concerned about the problem of fatigue failure in pipe that non-destructive testing for cracks has not predicted and suggest that ODP avoid running heavily-used pipe. TEDCOM is favorably impressed with the improvements in the DCS system since Leg 124E which have included: secondary heave compensator; top-drive system and winch; integrated platform, mast, and power-pack systems; core-barrel assembly; diamond core bits; bottom-hole assembly bits; latch for center bit; riser connector-tensioning tool; mini-hard-rock guide base; casing hanger; back-off sub; modified re-entry cone; and DCS 3-1/2 inch drill rod string. The addition to TEDCOM of someone with expertise in high-temperature drilling would be helpful.

838 Deep Drilling

TEDCOM had previously examined the Long-Range Plan in terms of the technological developments that are required and had noted that very deep drilling of Phase 1 and 2 objectives may be realistic but depend on manpower commitment and budget increases. Phase 3 objectives including a MOHO objective may not be realistic and TEDCOM recommended the organization of an International Symposium to address these concerns. PCOM suggested that as part of the 13-14 February 1990 meeting of TEDCOM, representatives of LITHP, SGPP, and TECP present their technological objectives, particularly those related to deep drilling. Discussion centered around the COSOD II goal

to drill through the crust into the mantle. To drill this kind of a deep hole will require the investment of both a large amount of time and money (estimates suggest 4 or more years of time and a \$500M cost). Some requirements for a hole to this depth include: dedication of a platform for extended amounts of time; a top drive system capable of establishing a large-diameter, perfectly vertical hole; a severing system; a riser system; and downhole turbine drives. In essence, it would be a system vastly different from the one on the *Resolution*. TEDCOM favors the creation of a small task force composed of members of TEDCOM/TAMU/LITHP plus some additional expertise in deep drilling to discuss how to proceed. Access to Russian experience of deep drilling and coring must be obtained.

Discussion

Malpas said that this technological evaluation of COSOD I & II priorities is long overdue. The present evaluation suggests that a dedicated long-term effort in the area of Lithosphere drilling will be needed to obtain these COSOD goals and this would be at the expense of other areas that ODP has pursued in the past. ODP must eventually make a decision about where it is headed. If ODP does not make a commitment to developing these drilling capabilities, then it is the same as saying we are giving up on the COSOD goals. Cowan is in favor of this kind of deep drilling as a scientific goal, but the realities of cost suggest the need for examination of whether or not it should be part of ODP. Watkins said that if these costs are accurate, deep drilling would seem to require development outside of ODP. This makes further assessment of the engineering requirements and costs vital.

von Rad was concerned that other communities within ODP, such as OHP, also require drilling time. Natland observed that programs such as margin drilling and some deep stratigraphic tests require a drilling capability of more than 3.5 km, which cannot be done with the present system.

Lancelot made the observation that ODP is approaching a turning point. Support for continuing in the present mode is waning; new science frontiers and special developments are needed. These can include some deeper objectives, not necessarily through the crust into the mantle, but at least some new and exciting challenges. Deep drilling into the Earth is a new scientific frontier. Leinen suggested that with its well-developed scientific base, ODP can serve as a spring-board for other new programs. Natland said that both COSOD and the workshop on Drilling the Oceanic Lower Crust and Mantle convened by H. Dick showed that there is a broad community interested in deep drilling.

Cita said a study needs to be done to see if the objectives of deep crustal drilling can be accomplished by an offset drilling program and to determine the feasibility of deep drilling considering the financial costs. Natland said that more is needed than just a price tag, we need to start thinking about

future programs. Garrison said that the present program will not evolve into one focussing on deep drilling; another structure in parallel to ODP is needed. Leinen said that for a deep drilling program to be successful it would need a structure similar to the one that ODP has developed.

Malpas said that the Long Range Plan needs to be examined to see what other developments are critical for ODP's future. Cita was concerned that there were items in the LRP that may not be technically feasible. Brass said that the LRP was designed to show what new areas of scientific endeavor were viewed as promising for ODP to move into and it was not assumed that the *Resolution* had to have all of these capabilities; alternate platforms were considered as part of the plan. Malpas said that it was important for ODP to move into new areas of science. Austin said that the LRP was consistent with COSOD goals.

Moberly suggested that a small group meet in conjunction with the next TEDCOM meeting which will include appropriate persons from other deep drilling programs (e.g. Soviets, Swedes, Japanese, Germans, etc.). Austin suggested that a Workshop would have the advantage of including a bigger constituency in the planning. Brass agreed that a large constituency needs to be developed. Austin asked how quickly this effort needs to be developed. Lancelot said that ODP needs to show that it is addressing these concerns and planning new initiatives. Malpas said that ODP needs to be actively pursuing these goals. Jenkyns said that the pragmatic view in the UK is that they cannot pursue both NEREIS and ODP and he was not sure how a separate deep drilling initiative would fit into the picture. PCOM took action in Minute 845.

Wednesday, 25 April 1990

839 Engineering Developments

M. Storms distributed a handout on the status of various engineering developments. He then discussed the following developments: Motor Driven Core Barrel (MDCB) formerly called the Navidrill Core Barrel (NCB3) has undergone further modifications and will be tested again on Leg 134; Sonic Core Monitor (SCM) was tested on Leg 130 where it had 4 good runs but still had some problems with core jamming and will undergo further testing on Leg 134; Drill-In-Casing System (DIC) was successfully used on Leg 131; Advanced Piston Corer-Design Upgrade (APC) was used extensively on Leg 130 where it had a rapid turn-around time and high recovery rate; APC Breakaway Piston Head (BPH) was field tested on Leg 130 where there were problems with premature releases of the piston head resulting in poorer core recovery; TAM Drilling/Straddle Packers (TDP) are ready for use on Leg 131 (Nankai) and a new go-devil redesign allows deployment of a downhole flow-meter; Pressure Core Sampler (PCS) was modified for use on Leg 131 (Nankai) adding another sampling port for sampling fluids by displacement

from the chamber and a "harpoon" sampling port for sampling fluids from inside the core sample; Conical Side Entry Sub (CSES) should be available for Leg 133; Vibra-Perussive Coring (VPC) drive unit is under fabrication. Investigation into the techniques and hardware required for high temperature drilling and coring operations are continuing; it is currently planned to test prototype hardware for controlling steam flash hazards on the third engineering leg. The Development Engineering schedules (Appendix D) were shown.

Technical support of third-party developments continues to be a significant role of ODP engineering, these include: Lateral Stress Tool (LAST) being developed by K. Moran for use at Nankai; Geoprops Probe being developed by Dan Karig which is still in the final stages of fabrication and probably will not be deployed before Leg 134 (Vanuatu); Pressure Meter also being developed by K. Moran which should be ready by the end of Spring 1990; Flow Isolation Plug is under discussion with E. Davis, B. Carson and K. Becker who are seeking outside funding and a prototype plugging system will be tested on the third engineering leg.

The Diamond Coring System (DCS) has been receiving about half of the Engineering resources at ODP-TAMU. Leg 132 will thoroughly test the system in its present configuration. The secondary compensation system has not been fully land-tested and modifications are still being made. There was a computer software problem which resulted in the weight-on-bit not locking in. The system is 80% functional and Storms was confident that the system will be fully operational for Leg 132 tests.

840 Preparations for East Pacific Rise Drilling

Engineering Planning

Storms first discussed improvements to the DCS system and then operational plans for Engineering 3, which are illustrated in diagrams in Appendix E. Storms reported that a major factor in system performance at the East Pacific Rise will be how long the drill bits last during drilling operations. By drilling the BHA into the rubble zone and leaving it in the hole, it is anticipated that the bit life should improve over the short bit life for drilling at the Mid-Atlantic Ridge. This is because re-drilling the rubble caving in from the sides considerably lessens penetration rates and bit life. The minimum that the BHA needs to be drilled in is 5 meters. With the Pogo concept it should be possible to find a location where the BHA can get sufficient penetration. The depth to which the BHA has to be drilled to case off the rubble zone will be the determining factor on the length of the Engineering 3 leg. Estimates are that around 25 days will be required per site on the EPR (Appendix E). Current estimates are that it will take about 125 days to drill 2000 m on the EPR using the DCS. At each site established on the EPR about \$100K worth of

hardware will be left in the hole but the guidebase can be picked up and moved to another location.

East Pacific Rise Detailed Planning Group

A letter from E. Davis outlining the results of the EPRDPG meeting was distributed. J. Austin, who was the PCOM liaison to the meeting, reported that the DPG first examined the report that the former East Pacific Rise Working Group had prepared outlining a general drilling strategy and decided it was still valid. The DPG next examined the data sets for the two competing proposals and decided that the better area was at 9°40'N, based on the geophysical data set which includes seismic refraction studies interpreted to indicate that the top of the magma chamber is reachable by drilling. The time estimates for reaching the high-temperature reaction zone at the top of the magma chamber is sobering and led to an approach of initially drilling only two holes rather than the 8-hole pattern originally proposed. Current plans are for a 1-1.5 km deep hole slightly off-axis and a 500 m hole in the axial fissure zone. The DPG has recommended that Engineering 3B at the EPR be delayed until after a cruise by M. Purdy in early 1991, which is expected to characterize the rubble zone by a near-bottom seismic study. The DPG has made some suggestions for further site-survey work. Although tentative sites were selected by the DPG, the precise locations were not chosen because the DPG felt the results of the detailed survey by Purdy were needed first. A detailed report will be submitted in time for evaluation by the thematic panels at their fall meetings.

Discussion

Brass asked what the depth was to the magma chamber. Austin said that a negative seismic anomaly at a depth of 1-1.5 km is interpreted to be the top of the magma chamber.

Langseth asked if the plans were to drill an active hydrothermal discharge system. Austin said that in order to avoid high temperatures the plan was to stay away from active edifices, but there are extinct hydrothermal chimneys which can be drilled. A hydrogeologic characterization would not be realistic with only two holes, so this aspect is receiving less attention. Langseth suggested that the drilling might be in the recharge zone and thus avoid higher temperatures in the upper part of the section. Brass commented that there would still be high-temperatures near the magma chamber.

Natland said that based on his experience on Leg 54 and later cruises, the results of Purdy's survey of the rubble zones at depth will have no effect on site locations, since it is the rubble zone at the surface that has the largest consequences for drill bit life and you can get only 20-30 m of penetration in rubble. The only way to get stability in the upper part of the hole is to drill in fairly thick and unfractured lava flows. Natland suggested putting in the

minimum amount of BHA, because if we could drill 150 m with the present rotary system there would be no use in developing the DCS to drill and core in fractured rocks. Storms said that by casing off a rubble zone with the BHA to avoid having rubble fall into the hole, the bit life and penetration rates should be improved. Natland asked what was the concept for the pilot hole and how would it be drilled. Storms said it is a bare-rock spud into the formation with the BHA and a mud-motor to see how much penetration can be obtained, so the correct amount of BHA can be made up for the hole for the DCS. Brass said DSDP results suggest that in rubble you do not get any significant penetration, but in massive flows you get penetration but the bits wear out very soon; you will be lucky to get 10 hours of drilling from a bit. Storms said that the bits have been significantly improved to enhance their life, but he agreed that 20 m of penetration is probably all that can be expected. Storms said that if they can drill and core another 100 m with the DCS then there would be enough hole to do as the DPG thought and make some slimline logging runs, especially to establish a temperature gradient.

Brass suggested that the best location for the sites would be in topographic lows with sheet flows, which will require local-scale seafloor surveys. Duncan asked if there was enough known about the surficial geology of this area to locate massive flows. Austin said that Fornari and Haymon have extensive electronic still camera images of the bottom in this area. Collapse features from 10 to 15 m across are observed which raises the specter of losing a guidebase.

Natland asked if the DPG had recommended the establishment of one or two holes as their priority. Austin said it was his reading of the DPG that they thought that at this time it was most important to establish the one off-axis site for the science drilling leg. Austin said the DPG debated if a science party was needed on the Engineering Leg. Moberly said that the original concept of the Engineering Leg was to spend some time preparing to drill at 504B and deploy guidebases at the EPR without needing a science staff onboard; now the ideas being proposed suggest that more time is needed to prepare for the science drilling leg. PCOM needs to make some decisions about where this leg is headed. Storms said that it is estimated that about one-half of a leg would be needed to set two guidebases and start holes; establishment of these holes on an engineering leg means that more time can be devoted to coring on the science leg. An engineering leg to establish two holes will also provide more information on the capabilities of the DCS system. Moberly said that there would still be a strong science component to the leg. von Rad said that it will take more than one science leg to drill the deep hole. The EPR was identified as a long-term science laboratory from the beginning.

Langseth asked if the DPG would meet again. Moberly said that they were asked to choose between the two proposals, which they have done, and to prepare a drilling plan, which they may or may not have done. Austin said

that it may require another meeting to examine the sites in more detail. Langseth said that he thought that the DPG needs to look at the balance between the science that might be achieved and the engineering objectives for setting the guidebases.

841 General Direction of the Vessel for the Next 4 Years

The major item of business for this meeting was to determine a general track for the *Resolution* for the next four years. Programs from any ocean were in competition and had been ranked by the four thematic panels. A review of the rankings of programs by each thematic panel was led by the PCOM liaisons to the last panel meeting. A summary of these rankings is given in Appendix F. In addition PCOM needed also to consider advice from other panels, the Science Operator, and Wireline Logging about such factors as: engineering preparedness; logging (and other tools) preparedness; status of site surveys; weather or clearance problems. PCOM was also to consider: balance among scientific themes, at the panel level and within panels; balance between the extremes of (a) transiting from the highest-ranked program to the next-highest, in any ocean, and (b) picking up all programs in an area before leaving that part of an ocean; balance in temporal aspects, between (a) interval since a drilling vessel was last used for the scientific interests of one part of the community, (b) commencement or continuation of long-term, multi-hole programs that may chiefly concern one part of the community, and (c) objectives of COSOD I, COSOD II, and the Long Range Plan.

Austin suggested that the first order cuts for determining the general direction of the vessel is to look only at the top 5 ranked programs from each thematic panel. Leinen said that PCOM needs to make sure that the panels have the opportunity to get their top-ranked programs drilled. This includes having the vessel in the right areas with sufficient time and giving the panels the resources (e.g. DPG) to develop programs that are not mature. In order to set the general track she suggested some criteria for making difficult decisions: 1) Each panel should expect to see at least 1 leg from each of their 2 highest-ranked programs drilled over the next four years regardless of multiple panel interests; 2) It is better to devote more than one leg of drilling to a top-ranked program than to drill a lower-ranked program; and 3) programs of interest to more than one panel that are highly-ranked should also be considered. The priorities of the thematic panel should guide the allocation of resources.

Brass said that at this point PCOM needs only to set the general ship track; programs remain in competition for drilling time. Lancelot said he agreed with the general statement by Leinen. The track of the ship, engineering developments, site-surveys, weather windows and other factors will eventually determine what gets drilled. By setting the general ship track, PCOM will be telling the panels where to put their efforts over the next four years. Austin said that the implications of the statement by Leinen is that we

are willing to accept less efficient use of the vessel by long transits and by-passing of some areas of lesser interest. Cowan was concerned that PCOM may not be democratic in its allocation of drilling time, so we may not be able to drill all high-ranking programs. Leinen said that PCOM needs to adhere to the thematic rankings of the panels to be consistent with what we told the community.

Brass said that PCOM may be trying to over-constrain itself; all that is required at this meeting is a general ship track and not a 4-year drilling site plan; PCOM needs to leave opportunities open for program development and new ideas. The community needs to know where the ship is going so that they can continue to improve old proposals or submit new ones. Moberly said that the general ship track will also allow funding agencies to know where to fund site-surveys, what instruments to develop, how to allocate ODP resources. The track will be pinned down on certain points by the weight of programs in that area, but this does not mean that these will all get drilled or others might not replace them. Malpas said that PCOM needs to adhere to the thematic advice given by the panels. A few fixed points are needed in the track, and these should be based on the thematic rankings. Leinen agreed that the track should focus on a few fixed points.

von Rad asked which parts of the next four years to April 1994 were relatively fixed and which parts were open. The FY 1990 program is set and being drilled, the FY 1991 program plan and the rest of 1991 have been planned but there are suggestions for modifications in the Engineering 3 Leg. For the purposes of this meeting, PCOM needs to set the ship track for 1992, 1993, and 1994 until April. The program plan for FY 1992 will be set at the next Annual meeting.

Malpas suggested that time constraints are useful for focussing thinking and loops may take away from this; the general track of the vessel should be to areas rather than specific sites. There are approximately equal numbers of programs in the Pacific and North Atlantic that are ranked very highly. Malpas suggested that the time should be divided about equally between the two areas. He suggested that the order be based on what is drillable at this time and therefore there be two more years of drilling in the Pacific followed by two years in the North Atlantic.

von Rad said that he had a similar idea to that of Malpas, with drilling in the Pacific including Chile Triple Junction, Cascadia, Sedimented Ridges 2, Hess and the Oahu pilot hole. Drilling would next move to the North Atlantic based on the highly-ranked programs located there. This would include drilling in both oceans of programs with the highest rankings.

Lancelot said that a proposed track in these two areas would address the highest scientific priorities of the thematic panels and satisfy any parochial

interests in the Atlantic. The decision would be based solely on the scientific merits without any political considerations.

Cita said that the time should be shared between the Atlantic and the Pacific based on the weight of the rankings of the programs.

Jenkyns said that the Caribbean would provide an appropriate hub. He was concerned that the highly-ranked Atolls and Guyots programs would probably get ignored because of the geographical bias caused by the long transit times.

Suyehiro said that a track in both the Pacific and Atlantic would satisfy the weight of the rankings by the panels.

Austin thought that ship tracks radiating outward like a wagon wheel from a central eastern Pacific hub would be the most appropriate. Long transit times have to be considered.

Natland was concerned that the preparedness of the Atlantic programs for drilling was not being taken into account. More time should be allowed for preparing the Atlantic programs for drilling. There are more Pacific programs in the top 10 than Atlantic programs, and many of these are ready to drill. Jenkyns said that this readiness was because the Pacific programs have had more time to be developed and therefore it would not be fair to compare them on the basis of preparedness. Langseth agreed that the Eastern Pacific has had a longer time to prepare and thought that a 1993 target for the Atlantic was appropriate. Natland said that the Atlantic passive margin drilling is very ambitious and more work needs to go into establishing the best drilling approach before the ship goes there. Cowan said that they could be drilled now and provide as much new information as came from past drilling on Leg 104 and during DSDP. Tucholke said the Atlantic proposals are in the same state that the EPR proposal was 3 years ago. He said he does not see an equal balance between Atlantic and Pacific drilling and was concerned with the loss of drilling time due to long transits.

Leinen thought that just the top-ranked programs should get drilled. Jenkyns said that the top-ranked program of each panel should get drilled. Moberly asked if this meant an exact 25% split of the time or do we include programs of multiple panel interest which will distort the balance.

Malpas suggested that the general ship track should focus on two areas, the North Atlantic and Pacific, based on the present rankings by the thematic panels. Planning should be for approximately 15 months of Atlantic drilling, this will help to focus further planning for these programs. Lancelot agreed with this suggestion provided that it was understood that only the best science will be done. Malpas then proposed the following motion which passed unanimously.

PCOM Motion

Recognizing the thematic priorities of the advisory panels, the Planning Committee has decided that the *JOIDES Resolution* will operate in two areas in the four years beginning April 1990, *i.e.* the Atlantic Ocean north of the equator and the Pacific Ocean. A preferred scenario is that the ship will continue in the Pacific until October 1992 and transit then to the Atlantic for a program that will continue through the completion of this 4-year plan. (Motion Malpas, second Brass)

Vote: for 16 ; against 0; abstain 0

842 Reports from Co-Chief Scientists of Recent Legs**Leg 127 Japan Sea 1**

Co-Chief Scientist Ken Pisciotto described the results of Leg 127 in the Japan Sea, one of the best known backarc basins in the western Pacific. Legs 127 and 128 were designed as a multifaceted drilling program to better constrain the tectonic, sedimentary and paleoceanographic history of the basin. The principle objectives of Leg 127 were to discover the age and nature of the basement, opening history of the Japan Sea, the dynamics of opening, paleo-environmental history, the present stress field in a developing plate boundary, and preparations for long-term borehole seismometer experiments.

Recovery of sediments were generally good, averaging between 52-65%, with the HPC providing significant improvements over Leg 31. Acoustic basement was reached and found to be interbedded sediments and basalts. Abundant volcanic ash layers were found and will be helpful for dating, especially since microfossils are absent in cores below 300 mbsf. There is a good magnetic reversal stratigraphy back to 5 my. Sedimentological studies indicate a rapid dropping of the basin following rifting at 20 my. Extensive deltaic sediments built out into the basin as it continued to widen and deepen. About 1.8 my ago the basin began to close and the Okishiri Ridge was obducted. Evidence for the presence of clathrates were found in some cores.

Leg 128 Japan Sea 2

Co-Chief Scientist Kiyoshi Suyehiro described the goals and results of Leg 128 which was the second leg of the multifaceted program. Primarily goals for this leg were drilling on the bathymetric highs for recovery of undisturbed sections for paleoceanography, collection of cores for bacterial activity studies, drilling in a failed rift to study metallogenesis, and make geotechnical measurements. Sediment cores provided detailed depositional and uplift history of the Okishiri Ridge, and cyclic deposits for detailed studies of Quaternary paleoceanography. Drilling in the failed rift which is similar to that inferred for the Kuroko deposits in Japan, did not find the massive

sulfide deposits expected. Unusual sediments found included glauconite sands and rhyolitic tuff sands. Logging results have revealed a 41 kyr Milankovich cycle for the cyclic light and dark sediments extending back to 2.5 my.

The downhole seismometer experiment was designed for a high resolution study of seismicity in the Japan Sea including earthquakes and teleseisms. The data package will be recovered by rope after being released by an acoustic signal. The seismometer was initially tested in real-time using a second ship as the seismic source. The initial results indicate that the Ocean Bottom Seismometer is noisy compared to land stations. The electrical resistivity experiment indicated that the Japan Sea has relatively cold lithosphere and upper mantle.

Leg 129 Old Pacific Crust

Co-Chief Scientist Yves Lancelot summarized the results of Leg 129. The main objective of this leg was to recover Jurassic sediments and the volcanic basement from the Pigafetta and East Mariana basins of the western Pacific. There has been extensive efforts extending back to Leg 6 of DSDP to get through the cherts and extensive basalt flows and recover the oldest open-ocean sediments and ocean crust. The chert problem was solved but the massive volcanogenic layers have frustrated efforts to penetrate basement. Windows through the basalts were needed and eventually identified by new seismic work and improved maps of the magnetic anomalies.

The first site drilled in the Pigafetta basin found clay, chert, carbonates, volcanogenic turbidites and Cretaceous volcanic flows. The second site 801 was finally successful in penetrating to igneous basement and recovered Tithonian-Callovian sediments. A reentry cone was set and this site was later reoccupied and drilled deeper into basement. The site in the East Mariana basin drilled volcanic tuffs, redeposited sediments, carbonates, upper Cretaceous volcanogenic sediments, and Cretaceous extrusive basalts. Reoccupation and further drilling at 801C cored an extinct hydrothermal system similar to the one in Cyprus. Jurassic radiolarites were recovered and are similar to the Tethyan in the Alps. Hole 801C is clear and cased to basement and ready to be reoccupied for further drilling and logging.

PCOM congratulated Drs. Pisciotta, Suyehiro, and Lancelot for their success, and thanked them for their presentations.

843 Modifications to the FY91 Program Plan

Suggestions were made earlier in this meeting that changes in the timing of the Engineering 3 Leg be made for scientific reasons. The Science Operator had also previously suggested some modifications for budgetary and engineering development reasons. BCOM had shifted SOE money to the DCS

which helped solve the budgetary problem. ODP-Engineering is still concerned that following Leg 132 the DCS will be at TAMU for only 4 months before the system needs to be shipped for Engineering 3B. Sufficient time for improvements in the DCS system may not be available.

Kappel said that T. Pyle recommends the Oahu Pilot Hole be included in the FY91 drilling following Leg 135. This would show a commitment to cooperate with other international geoscience programs.

Leinen said that a simple reordering of legs is different than the addition or the subtraction of a leg. The suggestion by the EPRDPG suggests that a delay in the Engineering 3 part at the EPR is appropriate. Moberly said that reordering will mean moving the Eastern Equatorial Pacific Neogene Transect to earlier in the schedule. Natland said that the changes proposed for Engineering 3B will make this leg about 55 days which means a full leg length of activity. Storms said that the 55 day length for Engineering 3B can be adjusted by the types of activities planned and the depth to which the BHA is drilled into the formation. Austin said that for the Engineering 3B Leg the EPRDPG now favors the establishment of the deep off-axis hole rather than setting two guidebases. Storms said that the one site would be sufficient for the engineering development tests.

Brass suggested that Engineering 3B be delayed and that the Oahu Pilot Hole be moved into the schedule. Cita said that the Oahu pilot hole should be moved into the schedule as soon as it is appropriate. This project involves a large scientific community whose support will be of value to ODP.

Leinen said she supports cooperation with other programs but thought that the Oahu pilot hole does not have high enough support to justify moving it into the FY91 schedule. It is a bad signal to the thematic panels and to the whole community that we are adding something not in the top few priorities. Jenkyns said that if ODP is going to ally itself with other global programs, exactly the same argument could be made for moving Atolls and Guyots into the schedule since it is of interest to international programs whose support should be courted.

Lancelot said that he thought that the Oahu Pilot Hole had good support from TECP but he agrees with Jenkyns that other programs could equally well be moved in for similar reasons. The Oahu Pilot Hole will give ODP a high return of good will with only a small investment from the program. Langseth said he was in sympathy with ODP showing good faith but that PCOM should not be stampeded into putting this program into the FY91 schedule, since it could also be done in 1992. Tucholke said that he was in sympathy with Jenkyns point-of-view and that other programs such as the North Pacific Neogene should be considered. The Oahu Pilot Hole does represent a contribution by ODP to what could be a very important international program that will reveal fundamental geodynamic processes.

Leinen said that the panels should have the opportunity to evaluate this program against others. Lancelot pointed out that the proposal was evaluated by TECP and LITHP in competition with these other programs. Natland said that there should be a direct science return for ODP for drilling the Oahu Pilot Hole; ODP should not be in the position of having to encourage funding for the other study. Tucholke disagreed and said that the persons involved in the Oahu Pilot Study felt that they had to have a commitment to have the hole drilled before they could honestly put in a proposal to do the pilot study. This proposal has been in the system for some time and it is now time for PCOM to give them an answer about cooperation. von Rad said that the project has strong support in the German seismology community and ODP should decide if it will support drilling the hole in the next two years of Pacific drilling. Suyehiro said that he thought that the Oahu experiment was good, but there would be some risks associated with putting the seismometer down the borehole.

Moberly said that with now a fixed date to leave the Pacific these extra days will displace a program of higher rank. Also, there have been unexpected delays because of the Singapore drydocking and additions to the Vanuatu leg. Langseth said that it looks reasonable to delay Engineering 3B at the EPR and shift programs around. Malpas agreed and suggested that the preferred scenario for the four-year track be changes so that the Pacific drilling is extended by one-half of a leg to do the Oahu Pilot Hole. He said that there was sufficient flexibility built into his motion to allow this. Austin asked if the changes proposed for the Engineering Leg at the EPR would make it more of a joint science and engineering leg. Moberly said that would depend on what PCOM decides to do with the leg (further discussion in Minute 846).

PCOM Motion

Following transit from the Lau Basin, a FDSN Test Hole north of Oahu will be drilled for a pilot study for an oceanfloor seismic station. This drilling is to be followed by the following legs in the order: Engineering 3A at 504B, Eastern Equatorial Pacific Neogene Transect, Sedimented Ridges 1, either 504B (if Engineering 3A is successful) or Engineering 3B at the East Pacific Rise (if Engineering 3A is not successful). Engineering 3B will follow 504B if Engineering 3A is successful. (Motion Natland, second Cita)

Vote: for 13; against 0; abstain 3

Brass said that the proponents for the Oahu Pilot Hole should submit a more detailed proposal for evaluation by the thematic panels. Decisions will have to be made about siting and coring. Meyer said that a cruise prospectus may not be prepared if there is no plan for coring. von Rad said that he thought there should be a thorough review of the proposal by TECP and LITHP who provided the support. Some science for ODP should come from this drilling.

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844 Preparation of the FY 1992 Prospectus

In order for PCOM and the thematic panels to have a set of information for evaluating programs for inclusion in the FY92 program plan, a prospectus needs to be put together by some group. The programs will come largely from those given in the latest CEPAC prospectus with the addition of several other Pacific programs ranked highly by the thematic panels. PCOM must decide who is to prepare the prospectus and what programs to include.

Natland suggested that the thematic panels could coordinate with the proponents of the additional programs to produce a document. von Rad said that a group selected from the thematic panels could prepare a document. Leinen objected that this could be considered a conflict of interest since the panels would also have to evaluate the programs. Austin said that a competitive atmosphere should be fostered.

Natland said that it is essential that some group with the appropriate knowledge calculate the time required to do the science and set some priorities. This was coordinated by the regional panels in the past and more recently by a DPG. Duncan said some uniform level of preparedness is required; something that includes primary and alternate sites, drilling and logging times, priorities and contingencies. Leinen said that the consensus at the WHOI meeting was to form a DPG to do this task.

Brass suggested that since most of the programs have been updated for the most recent CEPAC prospectus, that the JOIDES Office could coordinate the addition of the Peru Gas Hydrate and Hess Deep programs to this prospectus. PCOM would ask the proponents of these two programs to bring them up to the status of the other programs in the prospectus in time for preparation of a prospectus for evaluation by the thematic panels this fall. PCOM agreed that this was the best approach with the amount of time available.

845 Preparations for Drilling Beyond FY 1992

In order to prepare for drilling after FY 1992 various Detailed Planning Groups and Working Groups have been suggested.

Natland suggested that four were needed: a Volcanic Margin Working Group, a Sealevel Working Group, the Deep Drilling Task Force, and an Offset Drilling Strategy Working Group.

Cita proposed an Accretionary Prism Working Group to develop a coherent strategy for prism drilling. Langseth said that the Fluid Processes in Accretionary Prisms Working Group had prepared a report outlining drilling strategies. Brass thought that TECP should consider how best to approach developing a drilling strategy for accretionary prisms. Lancelot agreed that TECP needs to rank drilling prisms against one another and develop an

approach that will have a coherent strategy. Brass said that SGPP also has a strong thematic interest in drilling accretionary prisms. Cowan said that TECP and SGPP will have an overlapping meeting in Paris next fall and it would be an appropriate charge to have them consider how to develop a coherent strategy. PCOM agreed that this was appropriate.

Langseth said that LITHP should be charged to develop a strategy for drilling offset sections. Duncan said that this has been done already by the JOI/USSAC workshop on Drilling the Oceanic Lower Crust and Mantle convened by H. Dick. Brass said that LITHP and TECP should take this document and work together to develop an integrated approach. Natland said that there are 8-10 places where the deep crust can be studied by offset drilling and a group is needed to pick the best places to do this. Leinen and Lancelot thought that choosing the place was best left to the panels. Brass said that LITHP should be charged with making recommendations for establishing an approach for drilling offset sections. PCOM agreed to the suggestion.

Leinen said that importance of Deep Drilling for the future of ODP requires some group to be charged with this responsibility. Lancelot agreed that it was very important for ODP to move ahead on this matter. Natland said that it was important that TEDCOM provide its input. The following motion was made.

PCOM Motion

The Planning Committee recommends the formation of a Working Group on Deep Drilling. PCOM requests that the PCOM Chair consult with the TEDCOM chairman and thematic panel chairmen to formulate an appropriate membership and mandate for the Working Group for presentation to PCOM at its August 1990 meeting. (Motion Brass, second Leinen)

Vote: for 16; against 0; abstain 0

Brass suggested that a Sealevel Working Group was needed to focus generalities on to the actual Ocean Drilling Program. Watkins said that the report of the El Paso workshop would be out in a few months. The Conclusions section is finished. Moberly requested that the Conclusions section be sent to the chairmen of the four thematic panels. Lancelot asked what would be the mandate of the group. Brass said that they would formulate an integrated strategy for studying sealevel change by drilling. PCOM agreed to consider the formation of a Sealevel Working Group at its August meeting after the results of the El Paso workshop are examined by the thematic panel Chairmen and suggestions are made for an appropriate mandate and membership for such a group.

Lancelot suggested that PCOM form a Rifted Margins Working Group. Austin said that there has been a JOI/USSAC Workshop proposed to look at

the problems of volcanic margins. Brass asked if the workshop should be followed by a DPG. Brass said that PCOM is planning for 15 months of drilling in the North Atlantic beginning in about 2.5 years, so we need to begin planning this drilling as soon as possible. Austin said that the decision about whether it will be a volcanic or a non-volcanic margin drilling program will affect the strategy. von Rad said that TECP and LITHP have suggested a membership for a Volcanic Rifted Margin Group which includes persons who would be on any group regardless of whether it was a volcanic or a non-volcanic margin drilling program. Austin said that nominees are needed for a more diverse and less specialized group. Tucholke said that he does not think it appropriate to have a combined volcanic and non-volcanic margin group. Volcanic margins require a working group to sort them out since there are many proposals in different areas. The North Atlantic non-volcanic margins are a different group of persons looking at different problems. Strategy and tactics are needed for approaching these different problems. Two DPGs would handle making plans faster. von Rad said that providing manpower for two such similar groups could be a problem for the non-US partners. Lancelot thought that the one group to evaluate both volcanic and non-volcanic margin drilling programs was needed to get the work started and to make choices between the competing proposals. Malpas said that there are time limitations on what can be drilled and therefore competition for drilling time. A single group can come up with a focussed multiple-leg drilling program that will be in competition with other programs in the North Atlantic. Leinen suggested that the DPG be divided into subgroups that can meet separately if needed. The following motion was made.

PCOM Motion

PCOM establishes a North Atlantic Rifted Margins Detailed Planning Group combining expertise on volcanic and non-volcanic margins, the chairmen of the thematic panels will be consulted about possible members and PCOM will set membership and establish the mandate for the DPG at the August 1990 meeting. (Motion Natland, second Brass)

Vote: for 15; against 0; abstain 1

When the mandate for the DPG is formulated it will be decided if the DPG should be looking at conjugate margins. The non-US partners should be prepared to name persons to the DPG if they wish.

In order to prepare for North Atlantic drilling another DPG was suggested for integrating the North Atlantic Arctic Paleoceanographic Gateway proposals.

PCOM Consensus

After consultation with the thematic panels, a North Atlantic Arctic Paleoceanographic Gateway Detailed Planning Group will be formed and staffed at the August 1990 PCOM meeting.

Since two DPGs are going to be formed to work on North Atlantic proposals, PCOM decided not to form an overall DPG for this area at this time. Brass and Leinen suggested that the proponents of the top ranking proposals (top 5 Atlantic ones) from each panel be requested to bring their proposals up to prospectus style. PCOM, after discussion about how to keep programs progressing towards maturity and keep them competitive, came to the following consensus.

PCOM Consensus

The proponents of the top-ranked Atlantic proposals are to be informed that they should be endeavoring to bring these proposals to maturity so that they will be ready if chosen for drilling.

846 Strategy for Engineering Leg at 504B and EPR

The Engineering 3 Leg has engendered considerable discussion after the last PCOM meeting. At present, as in the approved Program Plan, there will be two components in preparation for lithospheric drilling in the eastern equatorial Pacific: 1) an attempt to clear the junk at the bottom of hole 504B so that it can be deepened to layer 3; followed by 2) setting of two hard-rock guidebases on the EPR at sites to be named by the EPR-DPG and approved by PCOM, so that the EPR bare-rock work can progress. Considering earlier recommendations from LITHP, PCOM decided that there would be a minimum of scientific work on what would be essentially an "engineering operations" leg. Considering the transit time, the Science Operator asked that the leg be split in two parts by a Panama port-call.

Various proposals have suggested that deepening of 504B be: 1) by milling followed by coring to layer 3; 2) by whip-stocking and re-drilling the lower part of 504B; or 3) by spudding a new hole near 504B. If a new hole is required, proposals have been: 1) drill close by, so that the upper part can be considered a near-duplicate to the present TD of 504B, then core deeper; 2) core close by, to and deeper than the present TD of 504B; 3) choose a place in the near vicinity (few km) to core to the top of layer 3; and 4) abandon the 504B area and choose a better place in any ocean for obtaining the layer 2-3 transition and the upper part of layer 3.

There have been recent panel requests to extend the time of Leg 136 to allow more coring and logging. Most recently LITHP has proposed the following for Engineering Leg 3A at 504B: after reentry, log temperature, sample fluid, and measure permeability; then mill (and fish or both). If the hole is cleared with time remaining, core ahead. If it becomes obvious that clearing will be unsuccessful in the allotted time, the remaining time should be devoted to as full a logging program as possible. DMP has made similar recommendations for logging with the exception that they propose a more extensive logging program before casing the hole in place of coring ahead.

Malpas asked why the whip-stocking option is no longer considered a suitable option. Storms said that with whip-stocking the chances of drilling ahead more than a few tens of meters is low; the bend causes many problems with the drill string and casing. Storms said that the Engineers feel that the best chance for getting deeper is by drilling another hole without coring. Duncan said that LITHP does not support that option and prefers the milling option at this time. Storms said that it will be known within 14 days if milling will work. Natland asked what will be done if 504B cannot be cleaned. Moberly said that LITHP has considered the options and recommends that additional logging be done along the lines of DMP recommendations. Langseth said that DMP has some suggestions that are different from LITHP. DMP recommends there also be sidewall coring. Jarrard said that ODP has not done hardrock sidewall coring. Langseth suggested that DMP recommendation #8 about measurements before recasing be accepted. PCOM agreed that hole 504B should not be recased prior to making the DMP suggested measurements, but these measurements do not have to be done on the Engineering Leg. PCOM passed the following motion.

PCOM Motion

PCOM accepts the LITHP recommendations for logging, milling operations, and drilling ahead at 504B. (Motion Leinen, second Brass)

Vote: for 14; against 0; abstain 2

LITHP has recommended the following for Engineering Leg 3B at the EPR: Rather than deploying two old-style large and expensive bare-rock guidebases with no actual coring, there should be, if possible, establishment of two or more drill sites on the EPR using one of the recently designed options. The use of "pogo" mini-guidebases and drill-in casing has been suggested, that presumably would leave sealed holes, cased by the abandoned BHAs, cored to about 50 m depth. They would be ready for further deepening on future legs. If these new techniques are unsuccessful, Engineering 3B could be used to try an array of others. The consensus of the EPRDPG was that the focus for the engineering leg should be the establishment of the deep off-axis hole.

Brass was concerned that the length of the Engineering 3B leg is approaching 60 days and is no longer just an engineering leg. PCOM therefore requested that before the August PCOM meeting, ODP-TAMU Engineering provide a list of options for the leg with associated time requirements. At the August meeting, PCOM will decide what to do with the Engineering Leg at the EPR.

847 Recommendations on Publications

IHP has made a number of suggestions concerning problems pertaining to publication of the "Scientific Results" volumes including: enforcing deadlines; keeping Editorial Review Boards; having the staff scientist act as an on-site expediter for the volume; and appointing an additional outside ERB

member at the request of the ERB chairman to lessen the load, which were mentioned previously in Minute 837.

Duncan said that some of the suggestions have been already accomplished by TAMU. Communication among the 4 members of the ERB is difficult and he thought a meeting of the ERB at a late stage is a good recommendation. Meyer said that a second outside member will not help improve communications. Moberly said that the idea was to lighten the load on the Co-Chiefs so they can write their syntheses. Lancelot thought that giving more control to the staff scientists should help improve communications. Lancelot said he did not think adding a member to the ERB would help, since the Co-Chiefs need to read the manuscripts in any case.

Duncan said that the load related to reviewing manuscripts is not a problem, it is more of a problem getting the manuscripts in time to write the synthesis. Meyer said that this is not a problem that will be solved by moving ODP Publications under Science Operations. von Rad said that having another person looking at the manuscripts will not speed up getting them to the Co-Chiefs. Austin said that PCOM should wait and give the changes already made some time to work before making further changes. Watkins said that PCOM asked IHP to look at the ERB and they have done so; IHP has made a recommendation to keep them and PCOM should accept it.

PCOM Motion

PCOM recommends the continuation of the Editorial Review Boards.
(Motion Watkins, second Natland)

Vote: for 16; against 0; abstain 0

PCOM was concerned about the loss of synthesis papers from the "Scientific Results" volumes. Watkins said that the burden placed on the Co-Chiefs should be lessened. The staff scientists should be given more responsibilities to help expedite manuscripts. Lancelot suggested that manuscripts should not be rejected without the concurrence of the staff scientist and Co-Chiefs. Duncan said that the major problem comes from the late submission of manuscripts. The new system of post-cruise meetings should help solve this problem to the extent that the synthesis can be started after this meeting. von Rad suggested that some mechanism is needed to ensure that there is some time to finish the synthesis after the manuscripts come in. He suggested the following and PCOM concurred.

PCOM Consensus

In order to encourage the inclusion of synthesis chapters in the "Scientific Results" volumes, PCOM suggests that the deadline for the synthesis chapters be 3 months after the submission deadline for the last manuscript for a volume.

Plans for the meeting of the former Indian Ocean Panel and Indian Ocean Co-Chief Scientists were reviewed by Duncan. The plans for the meeting are proceeding. The meeting will be in late June or July of 1991 in Cardiff Wales and will be hosted by R. Kidd. Participants will write synthesis papers along thematic lines for publication in a volume. Negotiations with AGU are proceeding for a Monograph series. AGU wants to know who will be the editors and have a Table of Contents before agreeing. D. Rea and R. Duncan will probably edit the volume. There is a proposal in to JOI/USSAC to fund participation in the workshop by US scientists.

Moberly informed PCOM that B. Taylor is willing to organize a thematically based meeting and volume on Western Pacific drilling. He wants to wait until at least the final three legs of the program are drilled (NE Australian Margin, Vanuatu, Lau Basin-Tonga).

848 Criticisms of the JOIDES Advisory Structure

The following topics show the range of recent criticism of the existing structure and policy of the program. They appear to be as important in some minds as the topic of outside membership on EXCOM and PCOM.

- Adequacy of current review procedures, including outside reviews of novel proposals; concept of maturity meaning multi-channel seismic lines as illustrated by K. Hsü correspondence.
- Importance of program, both absolute and relative, to other earth-science initiatives as illustrated by R. Coleman correspondence.
- Lack of economic or applied science aspects to ODP drilling as illustrated by D. Sangster letter.
- Co-chief selection and responsibilities; cruise prospectus as illustrated by letters from R. Larson and Y. Lancelot, and R. Wilkens.
- Lack of long-term commitment *i.e.* select best area and return until problem is solved as illustrated by P. Robinson letter.

Leinen said that in regards to the letter by Hsü, there is a difference between being open to new opportunities and not being supported by a thematic panel. Langseth said that review processes have changes as well, now all proposals get reviewed by the thematic panels. JOIDES has responded to this criticism. Brass said that JOIDES has made many changes, including eliminating regional panels and making sure that proponents get feedback from the panels. Tucholke asked if there was a policy about written reviews to proponents. Moberly said that a year and one-half ago changes were made to send proponents a written response from the four thematic panels. Tucholke said that the negative points brought up by Hsü should be refuted in a letter

showing the changes in the program that have been made to solve these problems.

PCOM affirmed its earlier policy for itself and JOIDES thematic panels that, during discussion and voting (ranking) of a proposal, any of the proponents listed on a proposal who are present as members or guests must leave the room. Further, PCOM agreed that it is not proper at a meeting that will lead to voting to ask a member or guest who is a proponent for a "summary" or "clarification" of some point, because proponents of other proposals (being absent) do not have the same advantage of direct communication with the panel. If more information is needed, there are mechanisms in place for proponents to respond.

PCOM Consensus

Proponents should not be present during the part of the panel meeting when their proposals are being reviewed or ranked.

Cowan said the comments made in Coleman's letter are extremely important for ODP. Coleman's opinion represents that of a large community of scientists who do not work in the marine geosciences, who have low operating budgets and view the large budgets for the ocean sciences as a drain on their funding. It is a community that needs to be reached and shown the benefits coming from ODP. Leinen agreed that it was a disturbing letter. ODP has not made an effort to reach out to other segments of the geoscience community. There has been some effort to form liaisons with selected other international programs that have overlapping interests with ODP, but EXCOM needs to take a lead in reaching out to other groups and help show the benefits of ODP science. A steering committee concept needs to be adopted, and EXCOM should help establish relationships with other geoscience initiatives. EXCOM members commonly operate on a different level than PCOM members do. Lancelot said that the problems are caused by the lack of advertising of the progress being made by ODP in tackling great science problems. ODP needs to lobby for the science that is being done. We also need to highlight some new initiatives that are in the forefront of science and which can reach out to other global programs. The LRP did not do this in an effective way. ODP needs to develop a higher profile with some public relations work. Malpas agreed and suggested that ODP should use the experience it has gained in 25 years of operation to provide leadership for other programs. Langseth said that there appears to be a misconception about the exciting science being done by ODP. Leinen suggested that JOIDES form a group to act as a spokesman for the science that is being done by ODP. EXCOM needs to be educated about the specific links that need to be formed to integrate ODP into these other global initiatives.

Malpas said that there is a malaise effecting ODP as a whole and within the Canada-Australia Consortium. There is a need to show that ODP is still doing

first-class science and to integrate our initiatives with other international programs. There is a need to educate other scientists about ODP.

von Rad said that ODP in Germany has prepared its own LRP to show what is being planned and how it compares to other programs competing for funds. ODP is superior to these other programs.

Jenkyns said that ODP is well thought of in the UK. It is attractive to the land geological community from which many participants on drilling legs come.

Suyehiro said that although the program is well-supported by oceanographers, there is a larger geoscience community in Japan and there may be some problems getting support for renewal after 1993.

Cita said that the ESF Consortium considers the program to be very strong with new science being attempted. There are many active participants in the drilling program.

Lancelot said that there is a large geoscience community support in France but new initiatives are competing with ODP for funding. Unless there is a change and some new high-profile initiatives such as deep drilling and global change are highlighted there may be some problems with renewal after 1993. Constant funding has been interpreted in France as a lack of continued interest in the advancement of the program by the US NSF.

Leinen said that these comments are disturbing and suggest that JOIDES needs to improve its image. She suggested that a subcommittee be formed to develop strategies to help with the renewal efforts. Malpas said that an effort should be made to educate others about what the successes of ODP have been and the directions for the future; something similar to the NSB presentation. This group should be sent to the member country funding agencies and other geoscience initiatives. Brass said a ringing endorsement of ODP from EXCOM is needed.

PCOM Consensus

PCOM was in consensus that a small *ad hoc* subcommittee be formed to aid the renewal process by developing strategies for generating excitement and publicity about the scientific advancements and technological achievements of ODP, coordinating presentations in the partner countries, countering criticism, identifying and strengthening weak points, and improving the image that ODP projects outside of the marine geoscience community.

Members of the subcommittee are J. Austin (chairman), M. Leinen, J. Malpas, R. Moberly, N. Piasis, and possibly a senior German geoscience administrator.

In connection with the letter by Robinson, Malpas suggested that the thematic approach will lead to more-sustained programs in one location lasting until a particular problem is solved.

Austin suggested that the issue of non-JOIDES Institutions having representation on PCOM be referred to the subcommittee for discussion with EXCOM.

849 Membership Changes on JOIDES Panels

Membership on the various JOIDES panels was reviewed and the following actions were taken.

LITHP Mark Zoback is to be invited to join the panel (alternate D. Moos) as the replacement for K. Becker with expertise in heat flow and downhole measurements. S. Humphris is to be asked to serve as the new chairman of the panel to replace R. Batiza.

OHP PCOM agreed to allow OHP to have 16 members for the fall meeting by asking A. Hine, J. Parish (alternate L. Pratt) and John Barron to join the panel (assumes that Eric Barron has resigned). OHP will revert to 15 members after replacing W. Berger and D. Kent when they rotate at the end of 1990. G. Wefer will be the new member from the FRG. PCOM asked that for replacements, persons with expertise in the Mesozoic be considered for appointment by the non-US members.

SGPP P. Froelich and M. Goldhaber are scheduled to rotate at the end of 1990. Possible replacements were discussed by SGPP, but no nominations were forwarded to PCOM and no actions were taken at this meeting.

TECP Eldridge Moores is to be asked to accept the chairmanship of the panel after the Fall meeting when Ian Dalziel will be stepping down. Jan Behrman will be replacing Karl Hinz for the FRG.

DMP D.M. Williams of Mobil Development and Research Corporation in Dallas, TX is to be invited to join the panel.

IHP Patty Fryer (new system of Results preparation) and Woody Wise (older system of Results preparation) are to be asked to join IHP as two recent Co-Chief Scientists. The Co-Chief positions will rotate more frequently.

PPSP No actions taken. Lou Garrison will be serving on the TAMU safety panel after his retirement as Deputy Director of ODP.

SMP Hugh Jenkyns will see if Ellen Thomas can be supported by the UK as a member-at-large to the panel. [UK has agreed to support Thomas as a member-at-large.]

SSP Ann Trehu is to be asked to join the panel (Greg Moore is the alternate).

TEDCOM No requests and no actions taken. TEDCOM does endorse the attendance of liaisons from the thematic panels at future TEDCOM meetings.

PCOM Motion

PCOM accepts the slate of persons nominated to serve on panels. (Motion Brass, second Leinen)

Vote: for 14; against 0; abstain 1; absent 1

Since Central and Eastern Pacific Detailed Planning Group did such a good job updating the Third CEPAC Prospectus and in addition PCOM decided not to use a DPG to prepare the Prospectus for FY92 Drilling, the CEPDPG was disbanded with the thanks of PCOM to the chairman D. Rea and all those who have served on this former regional panel and DPG.

PCOM Motion

PCOM disbands the Central and Eastern Pacific Detailed Planning Group. (Motion Langseth, second Brass)

Vote: for 15; against 0; abstain 0; absent 1

In terms of its own disciplinary balance, PCOM noted that the area of sedimentary geochemistry is losing expertise due to the rotation of M. Kastner and the imminent departure of G. Brass. J. Austin will talk to A. Maxwell about writing a letter to US EXCOM members reminding them that this should be kept under consideration when appointing new PCOM members.

PCOM liaisons to meetings this summer will be: Langseth to the Cascadia DPG meeting; Cowan to the DMP meeting; and Watkins to the SSP meeting.

Membership of Joint Liaison Groups

JOIDES panel members to be invited to be members of Joint Liaison Groups

Liaison Group with the Federation of Digital Seismic Networks

Mike Purdy, Co-Chairman (Woods Hole) member of TECP

Jim McClain (Univ. California at Davis) member of LITHP

Liaison Group with InterRIDGE

Kim Klitgord, Co-Chairman (USGS) member of TECP

Jason Phipps-Morgan (Mass. Instit. Technology) member of LITHP

Liaison Group with Nansen Arctic Drilling Program

Decision deferred to the August PCOM meeting.

PCOM Motion

PCOM accepts the slate of persons nominated to serve on the Joint Liaison Groups. (Motion Leinen, second Brass)

Vote: for 15; against 0; abstain 0; absent 1

850 Miscellaneous New Business**Burden on Panel Chairmen**

The amount of work placed on the chairmen of the thematic panels has begun to have serious consequences, one chairman has resigned and two others have indicated that they will be resigning in the next year. There is a lot of time-consuming work involved in reviewing proposals, preparation of the reviews, minutes, white papers, letters to PCOM, etc. Panel chairmen have been complaining that their personal scientific investigations have been suffering from the time commitments to JOIDES. The JOIDES structure has been through an exceptional period of change during the past two years, previously regional panels took some of the load of reviewing proposals and devising drilling strategies.

Leinen suggested that PCOM could be more liberal in forming DPGs to do the detailed planning. Cowan said that the reviewing process will always take a lot of time and effort. Brass suggested that the load might improve now that global planning has been done once. Austin said that he could foresee a continuation of the heavy reviewing and administrative loads placed on the panel chairmen. This is especially a concern for those on "soft money" who support JOIDES work at the expense of their own science. Brass said that it should not be the burden it was this past year. Langseth suggested that as the panels sharpen up their white papers and improve the reviewing process, they will become more efficient.

Austin suggested that a new set of guidelines for the preparation of proposals needs to be prepared, so that more mature proposals are submitted and the panels will not have to spend as much time soliciting more information. Crawford said that there have been a new set of guidelines published, which require an abstract and a summary of the proposed drilling. Leinen said that the letters sent to the proponents from the panels should specify what improvements are needed in order for the proposal to be considered again.

Leinen suggested that part of the problem is that panel decisions come up again and again for additional review at PCOM. Panels must continuously resell the science to PCOM after having once had it accepted. PCOM needs to stand by its decisions or if it changes them, provide compelling reasons. Brass said that PCOM makes the final decisions based on advice from different panels as well as its own perspective; it may not be possible to justify PCOM

decisions for each individual panel. Austin felt that PCOM needs full accountability for its decisions.

Lancelot suggested that some method other than just minutes is needed to get the thematic panel chairmen involved in developing the program plan. Austin said that the panel chairmen deserve more than they are now getting.

GPS Station on Sabine Bank

PCOM discussed the letter from F.W. Taylor about placement of a Global Positioning Station on Sabine Bank to establish plate convergent rates. It was noted that the goals of this experiment would tie-in with the scientific goals of the Vanuatu drilling, however, since PCOM does not evaluate these outside proposals against one another, it cannot provide an endorsement. If the project is funded, PCOM thinks the science results would be of use for the Vanuatu drilling.

Distribution of JOIDES Proposals

Should a proposal that is not yet placed on the drilling schedule be sent from the JOIDES Office to anyone requesting a copy? Present practice is to tell the requester to ask the proponent directly. Presumably, once the proposal is "accepted" (in the Program Plan), it can be made public as with other proposals to public funding agencies.

Brass said that he was concerned about having proposals sent out without the knowledge of the proponents, because of the potential problems with unauthorized use of the data or ideas for other proposals. He suggested that anyone outside of the JOIDES structure requesting proposals that were not in the schedule should request them from the proponents. Once they are under consideration for drilling, as in a prospectus, they can get wide distribution. von Rad said he thought this was agreeable.

PCOM Consensus

Once a drilling proposals is under active consideration for drilling it will become publicly available, prior to this, anyone outside of the JOIDES structure will have to make their requests for proposals directly to the proponents.

Multi-shot Orientation Tool

One of the recommendations of the Annual Co-Chiefs meeting was that the multi-shot orientation tool be run in all APC holes at low latitudes to improve the usefulness of cores for reversal stratigraphies. The time requirements are minimal being about 5-10 minutes for an APC section. Langseth endorsed the suggestion and suggested that this will improve the scientific value of cores.

PCOM Consensus

PCOM recommends that the multi-shot orientation tool be run at APC holes at low-latitude sites. At sites with multiple APC holes, decisions about additional runs beyond the first one will be made onboard.

Valu Fa Ridge as an Alternate Site

LITHP had suggested that the proposal for drilling ore deposits in the back-arc Valu Fa Ridge be considered for a back-up site during drilling on Leg 135 in the Lau Basin. This site was not considered when the prospectus was prepared and would represent another objective for a leg that is already full. Approximately 15-20 days of extra time would be required to drill at this site. Brass suggested that it was an acceptable alternate site, if for some reason the Co-Chiefs want another alternate site.

Routine Blind Whole-Round Sampling of Cores

SGPP has questioned the necessity of routinely collecting and freezing blind whole-round core samples for future organic geochemistry studies. SGPP has suggested that a study be made of the numbers and kinds of research programs done with these cores. PCOM requests that the Science Operator supply statistics on the usage of these cores for consideration by SMP. Leinen said that additional expertise in organic geochemistry may be needed. Moberly said that this can be covered by a request for a guest to attend the meeting.

PCOM Consensus

SMP in consultation with SGPP and the Science Operator will draft a policy statement on the routine blind sampling of whole-core cylinder rounds for organic geochemical analysis.

851 Future Meeting Schedule

The next meeting will be the 1990 Summer PCOM meeting in La Jolla from 14-16 August 1990 and hosted by Scripps. It is unknown at this time if a field trip can be arranged.

The 1990 Annual PCOM meeting will be hosted by the Hawaii Institute of Geophysics in Kailua-Kona, Hawaii from 28 November to 1 December 1990. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 27 November. A field trip prior to the meeting is possible if there is sufficient interest.

The 1991 Spring PCOM meeting has been changed to the University of Rhode Island from 23-25 April 1991.

The 1991 Summer PCOM meeting will be hosted by the FRG in Hannover from 20-22 August 1991. There will be a two day field trip after the meeting, which will possibly include stops in East Germany.

The 1991 Annual PCOM meeting has been changed and will now be hosted by the University of Texas at the Thompson Conference Center on the Austin campus from 4-7 December 1991. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 3 December.

The 1992 Spring PCOM meeting will be hosted by either Oregon State University or the JOI Office in Washington. Dates and venue are to be decided at the August PCOM meeting.

852 Conclusion of the Meeting

The Planning Committee thanked Yves Lancelot and Martine Cheminee for their efforts arranging the PCOM Meeting, the Reception, and the field trip. ODP France, the Université Pierre et Marie Curie, and Société Géologique de France were thanked for their hospitality.

The Planning Committee expressed its appreciation of the efforts of Lou Garrison on behalf of ODP by acclamation. Moberly said that we all recognize that Lou has been instrumental in the success of ODP.

The 1990 PCOM Spring Meeting adjourned at 4:45 PM.

JOIDES EXECUTIVE COMMITTEE MEETING
 October 3-4, 1989
 Royal Academy of Arts and Sciences
 Amsterdam, The Netherlands

DRAFT MINUTES

Executive Committee:

C. Helsley, Chairman - Hawaii Institute of Geophysics
 B. Biju-Duval - IFREMER (France)
 J. Briden - NERC (United Kingdom)
 D. Caldwell - Oregon State University
 R. Duce - University of Rhode Island
 H. Dürbaum - BGR (Federal Republic of Germany)
 D. Falvey - BMR (Australia-Canada Consortium)
 E. Frieman - Scripps Institution of Oceanography
 R. Gagosian (for C.E. Dorman) - Woods Hole Oceanographic Institution
 D. Kent-Lamont-Doherty Geological Observatory
 K. Kobayashi - ORI (Japan)
 B. Lewis (for G.R. Heath) - University of Washington
 A. Maxwell - University of Texas Institute of Geophysics
 W. Merrell, Jr. - Texas A&M University
 B. Rosendahl - University of Miami
 L. Westgaard - NAVF (ESF Consortium for Ocean Drilling)

Liaisons:

Roger Anderson (Wireline Services Liaison)
 D. James Baker (JOI Liaison)
 Donald Heinrichs (NSF Liaison)
 Ralph Moberly (PCOM Liaison)
 Philip Rabinowitz (Science Operator Liaison)

Guests/Observers:

M. Frata - European Science Foundation (Italy)
 A.T. Huntingdon - NERC (United Kingdom)
 D. Maronde - Deutsche Forschungsgemeinschaft (FRG)
 B. Munsch - Centre National de la Recherche Scientifique (France)
 Thomas Pyle - Joint Oceanographic Institutions, Inc. (U.S.A.)
 J. Stel - ESF Consortium for Ocean Drilling (The Netherlands)

JOIDES Office

P. Cooper - Science Coordinator
 L. d'Ozouville - Executive Assistant and Non-US Liaison
 K. Kikuta - Executive Assistant

Tuesday, 3 October 1989

475 INITIAL BUSINESS

C. Helsley called the meeting to order and welcomed all participants. Introductions were then made by all participants. J. Stel welcomed everyone to The Netherlands and explained the logistics for the meeting; he thanked Sandra Thiemann for making all arrangements.

ADOPTION OF AGENDA

C. Helsley explained that the meeting agenda is divided into three parts: Long-Range Planning for the Future, Near-Term Planning, and Present Status of ODP. The topic "data dissemination" was added to Section 482, Other business.

EXCOM Motion

EXCOM adopts the agenda for the 3-4 October 1989 Executive Committee Meeting. (Motion Dürbaum, second Maxwell)

Vote: for 16; against 0; abstain 0

APPROVAL OF MINUTES

C. Helsley noted that all corrections to the minutes received through 13 September had been incorporated into the minutes as they stand in the agenda book; the final minutes will include all other corrections/additions that arrived late.

EXCOM Motion

EXCOM approves the minutes for the 31 May-1 June 1989 Joint ODP Council and Executive Committee Meeting. (Motion Frieman, second Maxwell)

Vote: for 16; against 0; abstain 0

476 LONG-TERM SCIENTIFIC OBJECTIVES FOR ODP

RENEWAL TIMETABLE

D. Heinrichs explained the time frame for ODP Long-Range Planning. There are no requirements for changing the long-term program as presented at the 31 May-1 June 1989 Meeting; the only correction is that the NSB Program Presentation scheduled for October 89 has been postponed and will be rescheduled to a later, unspecified date. NSF is proceeding with discussions with international partners on the framework for structuring the program.

Discussion

In response to questioning by D. Falvey, D. Heinrichs said that representatives of the international partners would be contacted personally to work out what kind(s) of discussions are preferred-whether science, policy, formal presentations, etc. At the last meeting with Australia, it was thought that probably mid-1990 was optimal for formal talks since renewal of MOU's occurs during and after 1993.

C. Helsley questioned whether the postponement of the presentation to NSB was an indication that the NSB are not concerned about it. D. Heinrichs added the clarification that NSB has had some turnover and wanted extra time for updating new personnel. NSB wants to shorten its meeting schedule to 8 out of 12 months, hence the agendas for these

meetings are very full. Formal review is in 1992, so the presentation should take place before the next EXCOM meeting. J. Baker noted that the NSB presentation was prepared.

Post-meeting note: The NSB presentation was scheduled for March, 1990.

LONG-RANGE SCIENTIFIC PLANNING

Scientific Input to JOIDES

R. Moberly discussed the status of scientific recommendations to JOIDES. The Ocean Drilling Program is driven by proposals received from groups or individuals from the international science community. The list of proposals for ODP drilling received by the JOIDES Office is given in the Agenda Book. To be evaluated by thematic panels, a proposal must address a scientific theme published in the panel white papers, which, in turn, are based on COSOD I or II. In 1988, proposals received were dominantly from the Pacific; that trend continued through to the May PCOM meeting. The proposals addressed all of the various broad themes, but not necessarily all the smaller subdivisions. During the past four months, including up to the Friday before this meeting, the JOIDES Office had received many proposals focusing on the Atlantic and Atlantic margins, mostly of interest to OHP, but also of interest to SGPP, TECP and LITHP. All of these proposals will have been reviewed by next April in time for formulating the 4-year general track of the ship. There remain some large areas where there are few or no proposals - primarily the Arctic, Indian Ocean, and Central and Southern Pacific regions.

R. Moberly also reported on the amount of COSOD I work completed (Appendix 1). Because many of these themes are repeated in COSOD II, the next 2 years will have to include some COSOD I as well as COSOD II themes. The stress of this presentation was on COSOD I themes that have gone unresolved to date; a number of these were LITHP themes that have been worked into scheduled or candidate programs.

LITHP placed a special ad in EOS, Transactions of the American Geophysical Union, calling for proposals to address neglected themes, and TECP will probably do the same. ODP is in good shape as indicated by reviews and panel white paper enthusiasm, and in fairly good shape judging from proposals that have been submitted lately.

Discussion

In response to questioning by R. Duce, R. Moberly explained how PCOM ranks objectives. Because of some problems, primarily with Geochemical Reference Sites and Ontong Java Plateau, in future, the thematic panels must be as specific as possible in their recommendations for drilling programs. Programs must be ranked 1, 2, 3...., and not regionally. PCOM will look at an ordering of programs; a program must have a theme published in a white paper or COSOD document, there must be proposals to do the work, and there must be some reasonable chance of success (engineering available; no undue safety problems; no clearance problems). A program is not necessarily equivalent to a leg. Prioritizing is first in terms of science, followed by combined prioritizing in terms of safety, engineering, etc. Some programs will not be attempted soon (within the next two years) because of engineering and safety considerations.

H. Dürbaum commented that although there cannot be a complete separation between COSOD I and II themes, there is some danger in repeatedly proposing the same themes. C. Helsley wished to know if PCOM felt that ODP has been able to address the themes uniformly. R. Moberly responded that some overlap is unavoidable and even necessary. But, he cautioned that many of the objectives attained so far are COSOD II themes, and

therefore were not specifically mentioned in this presentation (Appendix 1). R. Moberly reminded EXCOM that the program is, above all, proposal-driven; there might be great interest on the part of the science community in undertaking a particular thematic program, but if there are no proposals, or the program is technologically infeasible, then the theme may remain unaddressed. J. Briden then stated that based on the information presented (Agenda, Appendix 1), achievement is patchy. The list of nonachievements is long and that of high achievements is short; therefore, one might presume the program is not successful. He added that this apparent lack of success exists primarily because scientists are never satisfied. C. Helsley pointed out that there has been fairly good balance among the themes; all have had some aspects addressed.

R. Gagosian asked if there were another group within ODP with a leadership role, i.e. actively pursuing the acquisition and development of new technology and soliciting proposals. R. Moberly explained that in the early history of DSDP, panels did most of the proposal writing. In the IPOD phase, it was decided that panels should only judge what outsiders were proposing, and no proposals were to originate from within the panel structure. As of last September PCOM has decided to let thematic panels propose drilling for high-priority themes that have had no proposals to see if that helps the program to address neglected themes. In this respect ODP attempts to have only one voice; PCOM gets status lists from ODP and recommends action on certain developments. J. Baker added that PCOM actively attempts to identify the engineering and logging requirements and to provide guidance to the Borehole Group and TAMU.

Long-Range Planning Document

T. Pyle summarized editorial and some substantive revisions to the LRP suggested by B. Biju-Duval and D. Falvey. B. Biju-Duval suggested an alternate wording for the second drilling platform to JOI (Appendix 1). Unless JOI hears from EXCOM, the plan will be submitted as is. Input has been solicited from PCOM regarding scientific achievements, industry impact and educational impact. JOI drafted a brochure (Handout 1) about the ODP intended to edify personnel who might not read the LRP document in its entirety, but who will have to review the program. All comments should reach the JOI office by 16 October enabling end-of-year publication. The prologue provided for LRP was too long, so JOI drafted an Executive Summary (Handout 2); comments on the Executive Summary should be in to JOI by 16 October, 1989. The brochure and Executive Summary will accompany copies of the LRP. Lastly, NSF has asked for a 10-year budget and JOI is working on the format for that.

Discussion

Several committee members suggested the elimination of much detail while others suggested changes in wording. B. Biju-Duval said that he was uncomfortable with the presentation of international membership in JOIDES; also, he believes that the document exaggerates the importance of advances in technology to oil and mining industries. His suggestion is to balance the words in terms of what is acceptable to everyone. D. Kent objected to Point 4, in that there is only a vague reference to support for this hypothesis. C. Helsley emphasized that Tom asked for input; EXCOM members should fix whatever they feel needs fixing and send it to Tom for inclusion. All changes must be received by Tom before 16 October and Tom will interact with J. Briden, D. Kent and B. Biju-Duval.

EXCOM Consensus

T. Pyle will accept comments about the Executive Summary of the Long Range Plan, and work them into a consensus statement.

Need for Future COSODs

D. Heinrichs stated that the next COSOD will be scheduled for 1993, not 1992, and that since MOUs and renewal is aimed at 1994, COSOD III should be different from previous COSODs and focus how you actually accomplish objectives.

When the ODP program is extended, the program should look forward to a 10-year renewal period, which will "wear out" the *JOIDES Resolution*. At that point there will be a need for an entirely new program.

Discussion

The lively discussion on this topic centered on the concept that an international scientific meeting or meetings should have a different focus. The general feeling was that COSOD III should definitely not be a listing of new objectives; more than enough of these already exist. While the timing of such an event was clear to EXCOM - perhaps as early as Fall 1991, but no later than Fall 1992 - the content was the subject of some debate. One view favored a presentation of past achievements combined with evidence of potential achievement; such a presentation would be very important for funding efforts, i.e. primarily "marketing" ODP as an international global science program to international partner countries. A second view favored a very realistic review of achievements (successes plus failures) and suggestions for changes to the program, based on this review. A third view favored a science meeting as a celebration of the achievements of 25 years of drilling, a purely scientific review. Some negative views were that since scientific objectives do not change rapidly, there is no need for COSOD III to focus on change. Further, D. Heinrichs pointed out that scientific review of the program is the job of JOIDES; an open scientific review at this stage has an air of finality about it that the program does not welcome. D. Kent spoke in favor of a forward-looking approach; a purely retrospective approach probably has little appeal in terms of selling the program. R. Moberly remarked that he was impressed that 3 of 4 who spoke in favor of such a meeting are member countries, and that PCOM will consider this carefully and not dismiss it as too much like COSOD II. The options of a meeting or series of meetings as a marketing vehicle was then discussed in terms of format. Suggestions for the meeting format included a self-contained symposium with publication, possibly part of IUGG (Vienna, 1991) or some other large meeting. J. Briden suggested that the meetings must be open; however, a free-standing meeting is difficult to organize, and the alternative, a subsession at IUGG or AGU, may not have the desired impact.

A subcommittee (J. Baker, J. Briden and D. Falvey) considered all possible options and suggested that there be not one large scientific meeting, but several smaller meetings tailored to the needs of each country. Several speakers would appear at each meeting to talk about scientific results, new technology, the effects of exploration, ODP as one of many global programs, ODP with respect to global change and paleoclimate. COSOD III is to focus on how to accomplish objectives, and these preceding meetings are in addition to that. They should be arranged through JOI with EXCOM and PCOM input. JOIDES will be a "sponsor." EXCOM and PCOM will identify speakers and countries should decide on the format; JOI will assist in preparation of the talks, graphics, etc.

C. Helsley stressed that the issue is making sure the community is aware of the ODP. If EXCOM is to encourage these meetings and sponsor them, then a "clearing house" is necessary. D. Falvey concurred, stating that his perspective is that JOIDES would have a role in the meeting. There is a need to convince (and educate) the public and industry as to what ODP is. He favors a "JOIDES-sponsored Seminar Series" with logistical support from JOIDES.

JOI will pursue this further and draw on help from the JOIDES office; member countries should decide on a format to fit their intent.

477 NEAR-TERM PLANNING

ACTION FROM PREVIOUS MEETINGS

Advisory Structure

R. Moberly (PCOM) presented PCOM's proposal regarding EXCOM's request that there be an insertion of general membership statements into the Terms of Reference of panels without such statements.

Discussion

There was some concern regarding who has priority in appointing panelists from member countries, PCOM or the appointing country. C. Helsley addressed this by explaining that each non-US member can appoint one panel member and PCOM appoints the remainder; this means the member country has jurisdiction over its representation.

EXCOM Motion

EXCOM approved the following change in wording of the Terms of Reference for Service Panels:

7.1 General Purpose [of Service Panels] is modified by having its last sentence [PCOM appoints the chairmen...] transferred from that section to be the first sentence in a new Section 7.1.1 New language is added, so the section reads:

7.1.1 Membership. PCOM appoints the chairman and panelists and keeps membership, including representation from the non-US JOIDES member institutions, under review. The chairman serves at the pleasure of PCOM, and members serve at the pleasure of PCOM or their non-US appointing member. Representation from all non-US members should be maintained. Panel membership, not to exceed 15, should be maintained as small as is allowed by the range of expertise necessary to meet mandate requirements. [Additions are shown underlined; transferred sentence is shown in plain text.]

•In order to provide some greater flexibility to request and receive ad hoc advice, PCOM asked, and EXCOM agreed, to have the PCOM mandate changed to allow the formation of working groups, by adding five words as follows:

3.2 Mandate. The Planning Committee is responsible for the mandates of the various panels, planning groups, and ad hoc working groups, and their membership. [Addition is shown underlined.] (Motion Merrell, second Caldwell)

Vote: for 16, against 0, abstain 0

Reviews

J. Baker (JOI) presented remaining issues raised by recent evaluation reports. There was a short discussion at the last EXCOM meeting regarding evaluation. If JOI followed terms, JOI should be preparing another PEC review. NSF granted a delay in the next PEC so nominations could be collected at this meeting. However, D. Heinrichs feels that the PEC review should be delayed once again, and nominations should start no sooner than June EXCOM meeting. Therefore JOI will be asking for nominees to start evaluation in Fall

1990, to report back in 1991. PEC is a review limited to subcontractors only, not to the overall structure. General questions are not addressed, but should be considered as we look to a new program in 1993-94. NSF and JOI should spend the next four months in consultation regarding a general review of the program. Exactly what kind of review is uncertain, but it is important to consider a broad evaluation.

Discussion

D. Heinrichs stated that part of this will be enacted in ODPC. C. Helsley emphasized that members should come to the next meeting with nominations for the next PEC.

NSF REPORT

D. Heinrichs presented the NSF Report on resource issues, budget status and membership. There only preliminary approval for the program budget: \$37,700,000 (of the requested \$38,000,000) reflects NSF's concerns for salary amounts (Appendix 2). T. Pyle remarked that JOI cannot meet its objectives with this amount; it was Pyle's understanding that the \$38,000,000 was to be approved after the salary issue was resolved. D. Heinrichs explained that the problem could be resolved and funding approved in near future. D. Heinrichs continued by stating that he does not anticipate problems with the Annexes, in general, but that the annex from France has not been received because of scheduling. Regarding the overall NSF budget, US Congress has failed to meet the time frame for the budget, and, until approval, NSF can spend at 3/4 level of 1989. Expect a firm budget by Oct/Nov. Expectations are not good for NSF, although President Bush approved increases in NSF funding, it is difficult to get money from Congress. If there is an impact on ODP, that impact would be in the US science component.

John Moore was in The Hague giving a policy talk. ODP was cited as an exemplary program of international cooperation. Dutch scientists have played an important role even before formally joining the program. Moore will later go to Paris to speak on an overlapping topic.

There has been no follow-up about the proposal of a Korea-PRC-Taiwan Consortium. USSR membership is proceeding slower than anticipated at the 31 May-1 June EXCOM because the administration is very slowly setting up its science advisory body and new people in the defense department are not yet up to speed on the issue. Discussions will focus on technology dispersal.

Discussion

R. Anderson wished to know a realistic earliest date for Soviet membership. D. Heinrichs replied that the Soviets have to develop the financial resources - Oct. 1990. R. Moberly requested an update when BCOM meets. H. Dürbaum asked if the USSR membership will increase the budget. When he asked 2 years ago, he was told that this would bring no new moneys. D. Heinrichs answered that Soviet membership will increase ODP's *ability* to increase the budget. The US 51% interest would be maintained

PROGRAM MANAGEMENT

Program Plan Review

T. Pyle (JOI) presented the Program Plan review. NSF has not approved the program and JOI is operating at a slightly reduced level. The two key issues under dispute are salaries and raises at Texas A&M and the TAMRF Fee (program offices make

the contracts people do this). Funding also should reflect a change in day rate, requiring an additional \$278,000.

EXCOM was reminded that the JOIDES Office rotates next October 1. Nominations for next non-US liaison must be in very soon, since the person selected will attend the April PCOM meeting.

Interaction with international global geoscience initiatives

NAD (Arctic), GSGP, RIDGE and Ocean Seismology briefed PCOM; invitations to establish liaison groups between PCOM and these global geoscience initiatives have been issued and JOI will brief PCOM in late Summer. Formal letters were sent out by JOI to representatives of these potential liaison groups (Appendix 3).

Discussion

H. Dürbaum supported the idea of coordinating efforts; but thought that seismologists should attend DMP meetings, sedimentologists SGPP meetings, etc. He emphasized that interaction should be at the panel level only, fearing that special interest groups with a direct line to PCOM could potentially override panel decisions. D. Falvey also expressed concerns that the proposal review process could be undermined and that introducing the mechanism of pressure groups from outside could undermine the way in which the external community views proposal evaluation within ODP. T. Pyle replied that representatives from other organizations prefer liaison at the PCOM level. C. Helsley explained that this liaison is the chair plus one other member, mutually appointed by PCOM and the organization. That means 2 representatives from each group at the summer PCOM meeting, increasing attendance by 6-10 people. Membership would be by appointment by PCOM; if this is important to PCOM, then travel should be covered by JOI; one solution is to reduce the number of meetings and have phone or written communications. R. Moberly remarked that the summer meeting is a time for catching up on loose ends and it would be an ideal time to include their participation. Further, JOIDES already has at least 1 person from these groups on panels already. T. Pyle explained that JOI's purpose is to establish a formal liaison with other global geoscience groups as a response to criticisms of the insular nature of the ODP program.

A. Maxwell said that if the liaison group overrides a panel or PCOM, there is the potential for a loss of structure. T. Pyle concurred and presented an alternative ODP structure (Appendix 4). B. Biju-Duval considered 2 levels of interactions as necessary: (1) A direct relationship between panel and liaison group scientists and (2) a more formal liaison necessary at the PCOM & EXCOM levels. R. Moberly explained that so far, only four groups are interested in themes that may require drilling; many other groups have no interest in drilling. C. Helsley stressed that this should be a year-by-year invitation; to get this started, EXCOM should concern itself with what to do between now and next June if one of these liaison groups wants to attend PCOM. These 4 groups are looking at an exploratory phase consisting of 1 or more formal interactions with PCOM. This is an experiment to see how ODP can involve itself with a larger part of the scientific community. J. Baker applauded the initiative taken by JOI. He also responded that the PCOM level was appropriate since the educational process of the liaison cross-cuts panel structure.

The discussion then turned to the appropriateness of a PCOM (or EXCOM) member serving as the liaison member, because it does give a special interest group an inside track to PCOM (over the panels). R. Moberly remarked that PCOM would prefer someone with experience in JOIDES organization, but he added that he agreed with Briden & Baker that a

PCOM member may be inappropriate. On the other hand, the safeguard is that co-chairs of these liaisons meet at summer when short and long-term planning is not under discussion.

EXCOM Motion

EXCOM approved the plan for the liaison groups with the proviso that current PCOM and EXCOM members shall not be members of liaison groups. (Motion Briden, second Falvey)

Vote: for 13; against 0; abstain 3

Discussion

C. Helsley suggested that EXCOM decide on action to take between now and next meeting, should T. Pyle receive a positive response to one of his four letters. J. Briden replied that the motion was raised knowing that 4 invitations had already been sent out, so JOI and PCOM should do the following:

EXCOM Concensus

JOI and PCOM will act to establish the liaison groups upon receipt of positive replies.

Preparation for Future Subcontracting Procedures

J. Baker discussed one of the issues of overall operating procedure with respect to subcontractors; informal consultations should take place over the next few months to reach a consensus on general issues of program management. D. Heinrichs commented that a letter goes out soon to ODPC broaching the same subject, but focusing on broader, more general issues.

NEAR-TERM SCIENTIFIC OBJECTIVES

Legs in the Western Pacific, FY 90

R. Moberly reported on the recent PCOM decision on Geochemical Reference Sites: The effects of Geochemical Reference Sites, Ontong Java Plateau, and dry-dock has led to further revisions of the schedule at the Seattle PCOM meeting; these are summarized on pages 008-009 of the agenda book. On pages 092-093 are parts of the draft minutes of that discussion, in more detail than usual, for obvious reasons. Basically, there was additional discussion - those in favor of a motion inserting the Geophysical Reference Sites Leg considered it of high value to LITHP whereas others pointed out that the reason for the change was to move the ship eastward for future work in the E. Pacific. There was a tie vote (with 2 abstentions) and the motion failed. Another motion to replace the Old Pacific leg by the Geochemical references also failed. Moberly asked for comments.

D. Caldwell questioned why this issue was referred to EXCOM. R. Moberly replied that it was not being referred to EXCOM; there was some concern that EXCOM may want to discuss the matter. H. Dürbaum said that he was reminded by this voting that important decisions perhaps should require more than a simple majority for a substantive vote. R. Moberly stated that EXCOM requires 2/3; PCOM, unfortunately, only requires a simple majority.

R. Moberly continued his report: Last year the ship was operating in the regional mode in the Indian and Western Pacific oceans; FY90 will see the ship finish operations in the

Western Pacific, dry dock in Korea, then finish the remaining Pacific legs (CEPAC). The number of legs being planned extends past the end of the fiscal year because of logistical needs (staffing, clearances, etc.).

- Leg 129, Old Pacific: Even though there is no deep drilling planned for this leg, the variations in crustal geochemistry should give LITHP clear indications of whether or not the geochemical reference site concept is useful.
- Leg 130, Ontong Java Plateau: This leg is a combination of a transect of Neogene sediments and Cretaceous and Paleogene paleoceanography. Basement objectives were never met on previous DSDP legs. The contention (of continental geologists) that the basement of this plateau and others like it is continental may finally be resolved by 300 m of basement drilling.
- Leg 131, Nankai: Although there has been great interest in a follow-up leg, it is felt that this single leg can stand as is regardless of a second leg or whether the new tools are ready.
- Leg 132, Engineering II: Engineering results from this leg will be applicable to many drilling environments and should lead to improvement in recovery. There will be an opportunity to test the Diamond Coring System in the Bonins. All legs through 133 have gone through the safety panel without any problems.
- Leg 133, 134, and 135: Plans for N.E. Australia, Vanuatu and Lau are progressing.
- Timing and purpose of Engineering III: After Leg 135, there will be a long transit followed by an engineering leg aimed at preparing for lithospheric objectives in FY91.

Discussion

D. Kent asked if the co-chiefs on the engineering legs will be scientists or engineers; how is engineering success evaluated? R. Moberly replied that co-chiefs will consist of one scientist and one engineer. The understanding is that the main purpose is engineering and that it has precedence over scientific objectives. The scientist is there to see that the engineers are sited in an appropriate area. PCOM is hoping that the people selected as co-chiefs are truly interested in the objectives of the engineering leg, so that scientists can tell the engineers that objectives are acceptably met from the scientific standpoint.

Legs in the Eastern Pacific: FY 91

R. Moberly reported that each panel has stated its interest in one or two of the following programs. No one program has the support of all panels. Several have survey work that will be completed during 1990.

- Cascadia Accretion: Relate venting, shallow (plastic) deformation, and earthquakes (brittle deformation) to fluid regime. Oregon and Vancouver present different aspects of deformational processes.
- Chile Triple Junction: This is a one- or two-leg program.
- East Pacific Rise Bare-Rock Drilling: The DPG has decided on a "template" (hole pattern), but no decision has been made as to where it will be placed. Guide bases must be set ahead of time.
- Eastern Equatorial Pacific Neogene: Proposals have had additional survey work recently.

- Lower Crust at 504B: If the engineering leg is successful in clearing junk from the hole, then there is no need to drill a new hole at 504B. If the debris cannot be cleared from the hole and a new hole must be drilled, LITHP prefers to move to another site.
- Sedimented Spreading Center: LITHP & SGPP; DPG provided a 2-leg (not back-to-back) scenario for drilling in the Juan de Fuca area.

There are 9 potential legs and PCOM will have to choose among them, taking into account the local weather conditions and panel recommendations.

Discussion

K. Kobayashi wished to know what PCOM wants to include in the Nankai experiment in FY90. There is concern that 1 leg may not be able to include all experiments and the entire leg may consist of only standard drilling at 1-2 sites. R. Moberly agreed with him that 1 leg will be too short, but a follow-up leg depends on the success of the first leg and are there other places in the world where TECP and SGPP might do these studies. There is no interest in going to every accretionary prism, but certainly there are particular candidate regions.

Further, although PCOM can't guarantee that the ship will be back in that area at some time in the near future, there are about 7 programs in this general area that will not be drilled and will be in the thoughts of the panels when they give their priority lists to PCOM next April. PCOM then will decide what the ship will do in future. Nankai has two panels interested in it and stands a good chance of getting a second leg.

NEAR-TERM SCIENTIFIC AND TECHNOLOGICAL PLANNING

General Direction of the Vessel Four Years in Advance of April, 1990

R. Moberly reported that the Fall 1989 PCOM will prepare to choose programs for future drilling. Programs that haven't made it into the drilling schedule will be considered for beyond the next fiscal year. Seven Western Pacific programs were left over, including Geochemical Reference Sites. J. Austin pointed out left-over programs from the Atlantic region. Others (southern oceans and Indian Ocean) have not yet submitted lists of programs that should be taken under consideration. PCOM has active proposals from every ocean, although the Atlantic and Pacific are far more complete. In Moberly's opinion, from ads, letters sent to past proponents, and write-ups in the JOIDES Journal, the science community has had ample opportunity to put forth their opinion. PCOM now has a system agreeable to all as to how to rank programs next April. Proposals are coming in.

Proposed Programs with High Thematic Ranking, to Date

- CEPAC programs not in FY91 list
- Remainders from Atlantic, Southern, Indian and West Pacific oceans

Current Proposals (Current proposals are listed in the EXCOM agenda book.)

Other Planning Issues

•The Diamond Coring System (DCS) vs logging: Two points from the August PCOM meeting should be discussed by EXCOM: (1) The DCS will not be compatible with the existing logging program; and (2) a recent PCOM motion places the burden of ensuring compatibility on TAMU. EXCOM should be aware of this motion because it does have budgetary ramifications.

Discussion

R. Moberly stated that the rationale behind the DCS is improved recovery of basement. The reason for the PCOM motion was a desire to get away from passing the problem around to the various groups. Of the solutions to the incompatibility problem available, reaming is not reasonable since about 1/2 the holes will be lost; drilling a second hole takes time and may be unstable; making the DCS larger may not be reasonable because of hole instability. PCOM's standing rules regarding logging may have to be changed to accommodate use of the DCS. P. Rabinowitz reported that the DCS hasn't been deployed in a deep water environment. In shallow water it recovered continuous, high-quality core. The double heave compensator worked well, and that is very important. He felt that at this point the problem is one of hole stability, not funding; later, with newer technology, ODP can drill bigger holes. If it takes more time to drill for a larger drill string, then the total time for reaming may equal drilling time. R. Anderson stated that there are logging tools that will go in slim hole, but they are 1950's technology and cannot operate at high temperature. Costs of developing new tools run about \$1,000,000 apiece.

• Structure of the Planning Committee: PCOM prepared a resolution (see Agenda Book, p. 13) that bears on the discussion of the PEC's comments on the openness of the JOIDES advisory structure to the community. PCOM suggested that a number of persons should be polled regarding this issue.

Discussion

C. Helsley said the PCOM motion did not require EXCOM action; it is a JOI matter, rather than EXCOM. Although this is a US-member issue, there is sensitivity to it by non-US members and it should be discussed. B. Rosendahl asked if there is a long-term 1-for-1 replacement policy. J. Baker replied that this has been discussed and he was asked to propose a schedule. D. Heinrichs remarked that some institutions may take offense at the wording of the statement regarding "primary repositories, etc."

478 PRESENT OPERATIONAL STATUS OF ODPSCIENCE OPERATOR REPORT (ODP-TAMU)Principal Drilling Results in the Western Pacific

P. Rabinowitz discussed principal drilling results in the western Pacific. Drilling results in the Western Pacific for Legs 126-128 were very good. Drilling at Site 793 on Leg 126 resulted in the deepest basement penetration to date (>1700 m); 19 holes at 7 sites with a total of 86% of allocated ship time onsite, 7% in transit and 7% in port. Following a review of Leg 127 staff and objectives, Site 794 was described as a prime hole (designated for seismograph deployment); 1600 m of rock recovered. Basement was interlayered sediments and basalts. Ten holes were drilled at 4 sites for a total of 78% of allocated ship time onsite, 15% in transit and 7% in port.

Leg 128 was still at sea at the time of the meeting. One of the objectives of Leg 128 was deployment of a downhole seismometer at Site 794. On Leg 127, the drill pipe was unscrewed after it became stuck in the hole; during an attempt to reattach on Leg 128, the drill pipe cracked. Drillers washed down to basement in a new hole, cased, and successfully concluded seismic experiments. The seismometer is still in the hole and will be operative for a year; recording package rests on the seafloor and can be retrieved and serviced periodically.

Status of engineering developments

Regarding the recent loss of several bottom hole assemblies (BHAs): Pipe is breaking off at the bottom. ODP uses old, but regularly inspected, drillpipe; the inspection process may be the problem. One solution may be to use new drillpipe-5 years may be the age limit for reliable drillpipe. New pipe is better than old, but 50% more expensive

The DCS is the primary development now; we anticipate testing on land in January 1990 and it should be ready to go aboard for Leg 132. We are very optimistic about DCS development; in years to come even the logging problem may be resolved.

Status of publications

- Legs 103-105 Scientific Results have been published (See Appendix 5).
- Legs 120-121 Initial Results are published; Legs 122-125 in the mill.

Other problems and progress

- Co-Chief Scientists have been chosen through Leg 135
- Staffing is complete through Leg 131.
- Staffing for Legs 133-135 is underway.
- No clearance problems are anticipated for any of the legs.

WIRELINE LOGGING SERVICES REPORT (ODP-LDGO)

R. Anderson presented the Wireline Logging Services Report on present status (Handout #3). Logging schools in the UK and FRG attracted roughly 50% industry people, 50% academic.

- The measurement suite is as complete as possible for the time being; no new tools have been developed since the industry is depressed.
- Examples of climate vs. borehole data, age vs. depth, and "tuning" logs to enhance Milankovic peaks were shown, together with a review of logging data from recent Western Pacific legs.
- ODP needs a much better side-entry sub to overcome bridging problems; this has been contracted by TAMU and is due next March.
- Insurance problems: ODP hasn't lost a logging tool in a year perhaps because of a very conservative logging program. Also, the newer tools are "smart," i.e. sensors close the tools to ensure recovery. Loggers may begin centering the sonic tools once again because the data quality lately has been poor; the mechanical padding endangers the tool, but gets better data. The borehole group is hoping to lower insurance costs by 20-30% (SOE is used for insurance).
- Experimentation with continual calibration of tools continues; primarily depth-shifting of log data with respect to core.
- The wireline packer scheduled for use at Nankai will be ready to field test this month and may be ready for deployment at Nankai.
- U.W. magnetometer will not be developed further.

Discussion

J. Briden asked whether FMS processing could be done on board. R. Anderson answered that his intent is to put on board the ship all Schlumberger software to produce "white paper plots" of FMS data. Twelve months from now the borehole group is hoping to have Mac II stations that can scroll FMS and BHTV data.

H. Dürbaum wanted to know what was the problem with the magnetometer. R. Anderson explained that the U.W. magnetometer combines a magnetometer and susceptibility coil, but the coil was too insensitive. A new coil was tried but didn't work, and the tool has flooded since then. The German tool is probably better; Schlumberger will provide that service in future.

Wednesday, 4 October 1989

479 MEMBER COUNTRY REPORTSFEDERAL REPUBLIC OF GERMANY

H. Dürbaum presented the ODP report for the FRG.

- To get the basis for broad, continuous support in FRG for marine science work, a paper listing the achievements and major future tasks for marine scientific research has been published by the Bureau of Minerals, Research and Technology.
- A special paper is in preparation outlining achievements and reasons for further participation for FRG in ODP; it is designed for program managers as well as the informed layman. It also highlights achievements of German scientists in this area, and, again, is aimed primarily at getting support.
- An ODP colloquium is to be held 10-12 January 1990 in Bremen; the informed press are invited to hear scientists report on participation in ODP legs and on shore-based work.
- Asking for proposals in the Atlantic has had favorable results.
- Several panel meetings have been held in FRG, the LITHP and DMP; there has been much exchange between DMP, SGPP and KTB; and SSP and OHP meetings are scheduled for October.
- KTB is conducting a large 3-D seismic experiment over a 20x20-km region with a deep central hole and 3-D expanded spread shooting to identify reflectors in the crystalline continental crust. Included are anisotropy studies and VSP; foreign guests have been invited to evaluate the data. Processing will take place next year.
- FRG is looking forward to a visit by EXCOM.
- Vacant staff positions and supply information should reach FRG as soon as possible; the number of foreign scientists working at TAMU has decreased because of lack of prior knowledge of vacancies. Earlier arrival of information would enable FRG to supply personnel in a timely fashion.

UNITED KINGDOM

J. Briden reported that the UK is conducting a review of ODP and it will be through NERC in the next few weeks; this is related to support of participation in ODP, representing <20% of the subscription. UK participation in ODP is more secure than in the past; it was helpful that in the C/S office a review of participation in international science (CERN and ESA) reported very favorably on ODP's science, efficiency, international nature. But, he cautioned, kind words don't cost money.

In regard to council membership: Bowman (Secretary, NERC) has left and Briden will continue as ODPC *pro tem*. H. Jenkyns (PCOM) produces a newsletter that gets good circulation to most of the earth-science community in the UK.

The biggest marine science event this summer in the UK was related to the *Charles Darwin's* return to the UK from a 3.5 year circumnavigation. A Sept. 15 seminar to which press and select individuals were invited got some good publicity. The seminar also attracted some international participants.

FRANCE

B. Biju-Duval presented the report for France. Sea activity related to ODP consists of 2 MCS surveys (Old Pacific and Flexure) and a France-Japan cooperative effort at Nankai involving long term observatories. Two sets of campaigns related to ODP will occur in the next year: (1) MCS in the Equatorial Atlantic and off Galicia; and (2) 2 re-entry projects for experiments in IPOD holes, the Fare expedition and the SISMOBS I & II seismic network experiment. The several new projects in the Atlantic are multi-national; the French science community is looking forward to more international cooperation; e.g. US-France Mid-Atlantic Ridge project and an international Caribbean workshop.

Final budget figures are not available, but will be soon. The level of science support to ODP is still uncertain, but a decision has been taken last week, and will be forthcoming.

IFREMER has asked France to look at European interest in the NEREIS project. At Strassbourg and at other meetings, the ESF and commission in Brussels will sponsor a workshop to examine the organization and needs of such a project. Domestically, the project received a positive signal from the committee for financing large equipment purchases, but the project should be considered with respect to the future of ODP.

The French ODP office is also aware of the need for timely announcements of vacancies, so they can be filled.

CANADA-AUSTRALIA CONSORTIUM

D. Falvey presented the ODP report for the Consortium. The structure of ODP funding in Australia is as follows: Funding comes from ARC, BMR, the Australian Vice-Chancellor's Commission (Aust. Universities) and the Antarctic Division of the Department of Sport, Art, Environment, Tourism and Territories. Representatives from those bodies form the Australian ODPC. That council appointed a national science committee responsible for the conduct and operation of Australian participation. The ODP Secretariat is at Tasmania (Tony Crawford). The Australian Science Committee provides members of panels.

BMR recently sent three proposals to the JOIDES Office and others are in preparation. An ODP workshop in Feb. 4-9, 1990 in Hobart explored the future direction of the Australia-Canada Consortium. Several Canadian guest speakers attended. The Australia ODP newsletter will come out 4 times per year as an inclusion in the Geological Society of Australia publication.

EUROPEAN SCIENCE FOUNDATION CONSORTIUM

L. Westgaard presented the ODP report for the Consortium. A mid-term review of ECOD programs was issued July 17, based on documentation by chairs of science and management committees of ECOD (Spearmann). The review was quite positive concerning

ODP structure and the rapid assimilation of ESF into that structure. The level of science participation by ESP personnel is in line with expectations. The panel found that ECOD is at a disadvantage with respect to proposals and site surveys; closer coordination of ESF countries is necessary. ESF personnel should have more opportunities to participate at TAMU, shipboard, JOIDES office, etc.

ESF recognizes the need for thematic emphasis.

Finally, there have been some changes in structure since the last meeting:

- ISCO moved to Milan (M. Cita-Sironi)
- ISCO meets in Basil next week to plan Palermo workshop next spring.
- Fricke is member at large to ODPC.

JAPAN

K. Kobayashi presented the ODP report for Japan and expressed the appreciation of Japanese geoscientists for the beautiful results of the *JOIDES Resolution* Legs 127 & 128 in the Sea of Japan. There were three major objectives:

(1) *Clarification of tectonic setting of the Japan Basin and Yamato Basin by revealing their basement ages and mode of post-spreading volcanic activity, as well as changes in sedimentary environment.* Age constraints shown by the holes will be compared with paleomagnetic results obtained on land at Honshu, Japan, which indicated the island was bent very rapidly about 15 Ma. Further shore-based investigations are planned, particularly on microfossils and sedimentary and petrological properties of cores.

(2) *Reconstruction of climatic and paleoenvironmental changes from Quaternary to Miocene.* It was well reflected in the logging data. Again, a lot of shore-based work will be necessary with micropaleontology, sedimentology, tephrochronology and other fields. A number of Japanese scientists are eager to participate in the study.

(3) *Deployment of a downhole seismometer and fan-shooting around Site 796 were successfully completed.* A Japanese research vessel, *Tansei Maru*, took part in this experiment. The first seismic data received on real-time basis by the *JOIDES Resolution* seem to be very good quality and hopefully will provide much important information on the crustal structure near the site. Seismic data will be recovered by Japanese vessels next year. They will also provide an interesting record of microseismicity in this area, close to the epicenter of a destructive earthquake a few years ago.

A Japanese 2000-m submersible, *Shinkai 2000*, made a series of dives at Okushiri Ridge this summer. Although its dives were shallower than 2000 m, it found and collected samples from an enormous outcrop of basalts, which seem to be a continuation of the basement that *JOIDES Resolution* attempted to penetrate. These results will yield a good link with ODP results.

The downhole temperature measurement instrument for long-term monitoring of borehole temperatures at Nankai was completed and tested on a cruise of the new *Hakuho Maru* (Cruise KH89-1). It worked sufficiently well and will be used on the upcoming leg at Nankai Trough.

During a joint research program with French scientists, the Kaiko-Nankai Project, the French submersible, *Nautilie*, had 24 dives at the eastern portion of the Nankai Trough. The first deformation front of accretionary prism is the most active at present. There is a line of cold seepage sites with many living bivalves. The location of dives is farther east than the proposed sites of Nankai drilling. However, correlation will be done using seismic lines between the two. One additional multichannel survey is planned this December by *Tansei Maru*.

UNITED STATES NATIONAL SCIENCE FOUNDATION

D. Heinrichs reviewed the 5-year history of the ocean science budget; the "magic" years are from 88-93 with a doubling of NSF budget. The FY90 budget request is before Congress now. Funds going to global science will be about \$22 million by 1990; this is the largest growing budget item.

There have been two staff changes at ODP: (1) D. Heinrichs changed jobs (Gross returned as Division Director) and now is ODP Section Head; and (2) Al Sutherland, Assoc. Director for Operations, left for the Antarctic program.

Programs underway include Cascadia (Kulm, OSU), Pacific Neogene (Pisias, USU), and EPR (Fornari, LDGO)

Funding for 1990 USSAC/USSSP - \$4.5 million; funding for the Unsolicited Grants Program - about \$5 million

Field Programs sponsored:

1. Miller/Christie-Blick (LDGO)
 - MCS cruise, eastern US continental margin
 - Sea level history
2. Delaney/Spiess (U. Wash./Scripps)
 - Side-scan sonar & dredging in Kane Transform
 - Imaging of exposed crustal rocks
 - Co-op with Catherine Mevel (France)
 - Nautile* dives proposed in 1991
 - May be a problem in scheduling for 1990
3. Overpeck (LDGO)
 - Profiling/coring in Cariaco Trench, Caribbean
 - Jointly supported with MGG
4. Purdy (WHOI)
 - NSAR bottom refraction near 9°N on EPR
 - Will likely occur in early 1991

T. Pyle presented a report for USSAC/USSSP (Appendix 6):

USSSP is administered by JOI and advised by USSAC; USSSP-sponsored activities include:

- A geochemistry workshop (Kastner and Brass) in January, open to all.
- Purdy's downhole group.
- K. Becker, Juan de Fuca.
- F. Spiess (Scripps), wireline reentry system developed and deployed in ODP 534 successfully from a standard oceanographic vessel.
- Mac II software for reading CDROMs under development.
- Logging schools - International Geological Congress is the most recent one.
- 4 graduate fellowship awards.

480 EXCOM ACTION ON NEAR-TERM PLANNING

APPROVAL OF MANDATE AND TERMS-OF-REFERENCE CHANGES

Approval of Mandate and Terms-of-Reference Changes has already been accomplished.

FILLING BCOM (DATE AND VENUE)EXCOM Motion

EXCOM appoints Hans Dürbaum and James Austin to the Budget Committee. (Motion Caldwell, second Maxwell)

Vote: for 16; against 0; abstain 0

J. Briden and B. Lewis will remain on BCOM until next summer.
BCOM meeting date, set by Pyle, Briden and Dürbaum, is 6-8 March, 1990.

L. Westgaard has replaced Jan Stel as the ESF Consortium for Ocean Drilling representative to EXCOM

481 FUTURE MEETING SCHEDULE

Next meeting is 20-22 June 1990 in Washington DC, or at Annapolis, MD.

Oct. 2-4 1990 meeting in France, at Villefranche or Nice.

482 OTHER BUSINESSCD-ROM Capabilities

B. Biju-Duval mentioned that the capability to have data in this format is important and a rapid decision should be made to have all ODP data in this format. IHP made such a recommendation. T. Pyle added that for \$50,000-100,000, which is very inexpensive, the software can be written for putting ODP data on CDROM; however, this money is not in the budget.

C. Helsley said that although the general access to data that we do have is useful, this is an item that should be recommended by PCOM. B. Biju-Duval replied that timing is the problem; next PCOM will be too late. T. Pyle and D. Heinrichs are aware of the issue. T. Pyle concluded that if IHP recommendation gets to PCOM in November, and PCOM acts, everything will be OK as far as timing is concerned.

483 CONCLUSION OF THE MEETING

C. Helsley extended his sincere thanks to ESF for hosting the meeting and to J. Stel for all the local arrangements including yesterday evening's dinner and tour of the canals, and tomorrow's field trip to the Delta Expo.

APPENDICES ATTACHED TO 3-4 OCTOBER, 1989 EXCOM MINUTES

1. **Annex 3 - Technical Requirements (T. Pyle)**
2. **Ocean Sciences Budget (D. Heinrichs)**
3. **Sample Letter to Liaison Groups (T. Pyle)**
4. **Proposed Revision to JOIDES Advisory Structure (T. Pyle)**
5. **Distribution Dates of ODP Volumes - FY90 (P. Rabinowitz)**
6. **Summary of CY5 Activities (T. Pyle)**

LIST OF HANDOUTS FROM 3-4 OCTOBER, 1989 EXCOM MEETING

1. **Draft, brochure outlining the principal accomplishments of ODP**
2. **Long-Range Plan Executive Summary: Draft 9/29/89**
3. **Wireline Logging Services' Report**

Appendix 1

ANNEX 3 - TECHNICAL REQUIREMENTS

1. We were several to say at the EXCOM that we have to insist on downhole measurements techniques in that chapter.

Sampling and core recovery improvements must be distinguished from in situ measurements, long term monitoring, and any other downhole instrumentation. Page 50 is not well organised in this sense. Can we think of separating those two items as (1) sampling and (2) monitoring ?

2. The use of alternate drilling platforms only discusses the category of platforms which would be used on a contract basis. Why ? The incorporation (or not) into a continuous planning process of additional drilling facilities is another possible option which depends more on management than on science.

On page 52 it is said that the use of a second platform ...is not a requirement. Then a more positive statement follows and finally it is said that "the regions of the ocean where this approach would be of great benefit may be limited". This is not true. It seems to me that among the 16 themes defined as possible targets for future drilling, several of them may be achieved with a platform different from the present one.

So I would propose the following text in replacement of the paragraph 2 (p. 52) =

The use of a second drilling platform, such as the ship discussed in the COSOD 2 document, that would be incorporated into the Ocean Drilling Program on a more continuous basis is not presented in this document. A second platform would, however, greatly add to the scientific return from ocean drilling. For example, one of the major objectives for future drilling and scientific investigation of the ocean is the establishment of long term observatories and monitoring systems within drill holes. A second platform (envisioned to be smaller and less costly than the Resolution) with deep water re-entry and drilling capability would be a cost-effective method for servicing and installing instrumentation packages in drill holes previously drilled by the Resolution. Such a platform could be used for shallow-sediment drilling, specifically with piston coring technology, and shallow basement drilling. She also could address some of the objectives by allowing the capability to deploy logging instruments, long term geophysical and geochemical monitoring systems on and below the sea-floor. Improvements in the heave compensation would allow to recovery very high quality piston cores essential for the succes of many objectives to be adressed by ocean drilling in spite of the lower stability of a smaller vessel than the Resolution.

Ocean Sciences Budget

	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>Change 86-90</u>
OSRS	56.9	66.5	67.2	71.2	74.7	31.3%
OCFS	33.7	37.2	37.2	43.6	45.3	34.4%
ODP	<u>28.8</u>	<u>30.0</u>	<u>30.6</u>	<u>31.4</u>	<u>32.9</u>	<u>14.2%</u>
	119.4	133.7	135.0	146.2	152.9	28.1%

FY 1990 Budget Increment

- Global Geosciences \$4.0 M
- Disciplinary Base Adj. \$1.2 M
- Ocean Drilling Program \$1.5 M

FY 1990 Budget Profile

<u>Science</u>	<u>\$88.3 M</u>
• Disciplinary Science	73.8
• Global Geosciences	14.5
• Education & Human Resources	(2.5)
<u>Facilities</u>	<u>\$64.6 M</u>
• Disciplinary Science	56.9
• Global Geosciences	7.7
• Capital Equipment	(4.2)

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FAX: (202) 232-8201

27 September 1989

Dr. Adam M. Dziewonski
Department of Earth and
Planetary Sciences
Harvard University
Hoffman Laboratory
20 Oxford Street
Cambridge, MA 02138

Dear Adam:

To follow up our discussions of improving coordination between the Federation of Digital Seismic Networks (FDSN) and the Ocean Drilling Program, the Planning Committee (PCOM) of JOIDES, at its recent meeting in Seattle, expressed its interest in forming a number of joint working groups with your program and others. Within the JOIDES structure, such working groups (or other formal designation to be agreed on) would report to and interact directly with PCOM; reporting arrangements and interaction with FDSN would of course be up to you. To minimize travel costs and demands upon people's time, we would hope that much of each group's business could be done via letter, telephone and telemail. In addition to any meetings that are required, PCOM would invite the co-chairmen of the group to attend one of its three meetings each year. We hope that FDSN would proffer a similar invitation. The ODP would be willing to pay for the travel of the two co-chairs to the PCOM meeting each year. For any other meetings, each program would pay the travel costs of its representatives.

If you are interested in such a cooperative effort, please send the PCOM Chairman (Ralph Moberly, JOIDES Planning Office, Hawaii Institute of Geophysics, 2525 Correa Road, Honolulu, Hawaii, 96822) the names of your designated members (a copy to me would be appreciated). I think three members (of which one is co-chair of the group) is about right, but we can discuss this if there is a problem. PCOM would then designate its three representatives and co-chair and ask the Executive Committee (EXCOM) to approve the establishment of the group as a formal part of the JOIDES advisory structure. EXCOM has already agreed in principle that such groups are desirable. EXCOM's approval is not of FDSN's members but of a specific new group at the level of its existing thematic panels.

27 September 1989
page two

I look forward to getting past these initial mechanical details and seeing how such a liaison effort works. Our two programs have much to offer each other and they should be mutually reinforcing. I hope to hear from you soon.

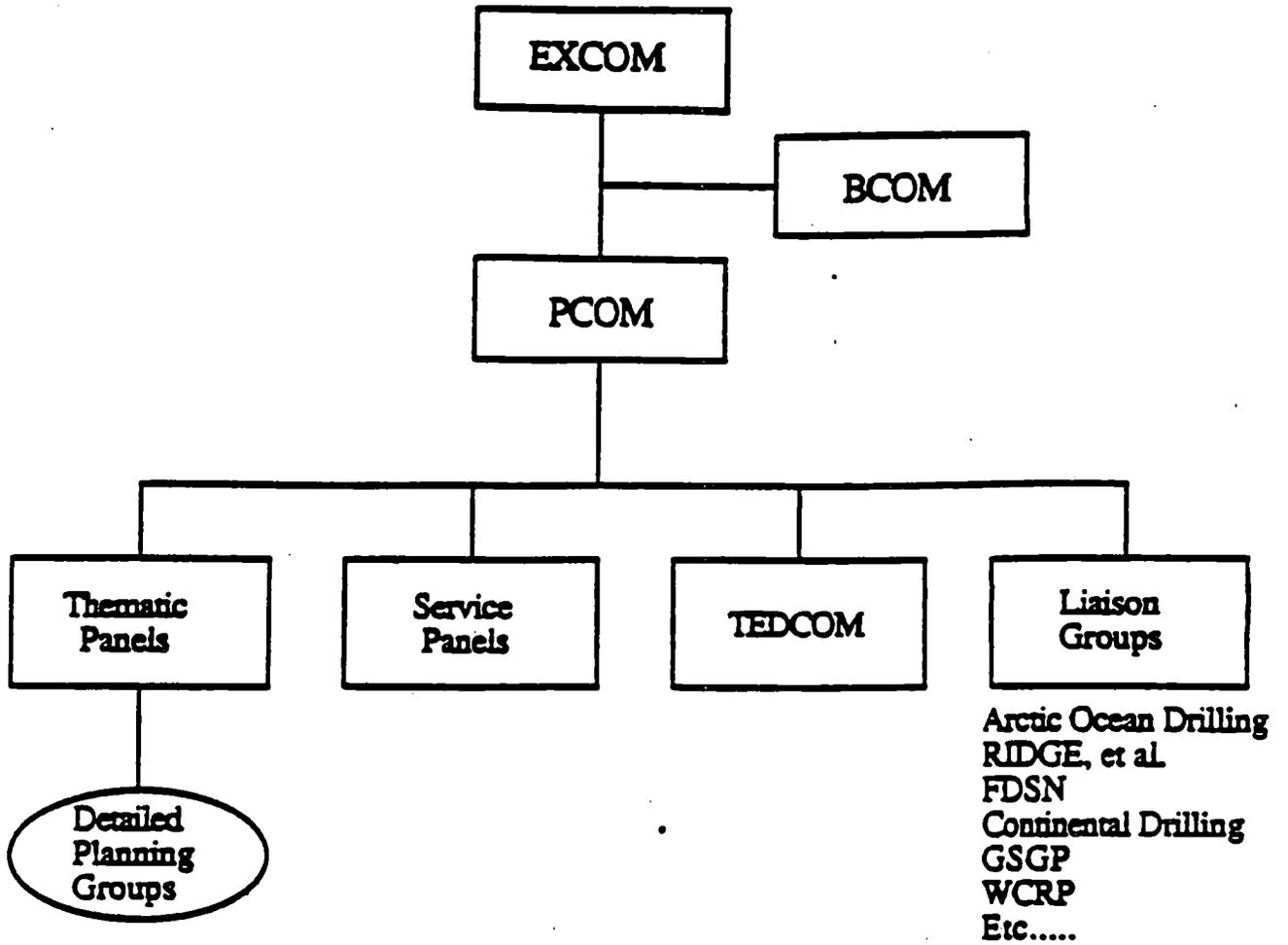
Sincerely,

Tom

Thomas E. Pyle
Vice President and Director
Ocean Drilling Programs

cc: B. Malfait, NSF
C. Helsley, Chairman, EXCOM
R. Moberly, Chairman PCOM
D.J. Baker, JOI
E. Kappel, JOI
P. Rabinowitz, TAMU
I. MacGregor, NSF
G.M. Purdy, WHOI
J. Orcutt, SIO
F. Duennebier, HIG
R. Butler, IRIS

Proposed Revision to the JOIDES Advisory Structure



Distribution Dates of ODP Volumes - Fiscal Year 1990

Volume	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
Initial Reports												
120		19										
121		17										
122					17							
123					16							
124/124B						13						
125								13				
126										13		
127												13
Volume Scientific Results												
104	50											
105	48											
106/109				43								
107				42								
108			44									
110					43							
111			38									
112							39					
113									39			
114											39	
115												38

Initial Reports, distribution 49 days (less proofing time) after receipt of final copy.

Scientific Results, distribution 33 days (less proofing time) after receipt of index material.

Due to the heavy load of material shipped in September and October, it is possible that there will be some production delays with the printer. The contract is written to have a maximum of fourteen volumes printed per year. In fiscal year 1990, twenty volumes are planned.

Numbers indicate months post cruise.

Summary of CY5 Activities

March 1, 1989-September 15, 1989

Workshops

Kastner (SIO) and Brass (RSMAS): "ODP Geochemistry: Progress and Prospects" January 9-12, UCLA Conference Center

Purdy (WHOI: USSAC/IRIS funding): Downhole Seismometer Steering Committee

Survey Augmentation

Becker (RSMAS): Participation in Canadian Site Survey to Sedimented Spreading Center at Middle Valley, Juan de Fuca Ridge, Escanaba Trough, Gorda Ridge.

Larson (URI): Multichannel Seismic Interpretation Across Geochemical Reference Section Drill Sites Near the Bonin/Mariana arcs.

Karig (Cornell): Development and Use of ASR Equipment for ODP Leg 129 (Nankai Accretionary Prism)

Johnson (UW): High-Resolution Geophysical Survey of the Middle Valley and Endeavour Hydrothermal Fields

Result Dissemination

Domack (Hamilton College): Thematic Supplements to Undergraduate Curriculum: Results of the Ocean Drilling Program. Pilot project subject is Cenozoic glaciation (Legs 104, 105, 113, 119 and 120)

Instrumentation

Spies (SIO): Development and Operation of a Wireline Re-Entry System (Phase I: Design and Preliminary Testing)

Data Storage

Development of Macintosh software for use with the DSDP CD-ROMs.

Logging Schools

International Geological Congress, Washington, D.C., July 1989

Graduate Fellowships

Richard Murray, UC Berkeley: Rare Earth Elements as Geochemical Indicators of Marine Depositional Environment.

Steven Chambers, Stanford: A New Look at an Old Problem: Silica Diagenesis at the Atomic Scale.

Lewis Abrams, Ufit: The Correlation of Drilling Results with Multichannel Seismic Data in the Western North Pacific.

TERMS OF REFERENCE

Science Advisory Structure of JOIDES for the Ocean Drilling Program (ODP)

The purpose of the ODP Science Advisory Structure of JOIDES is to enable the formulation of the most productive scientific plan for the program. JOIDES is open to suggestions and proposals from the entire scientific community, and its plans shall be open to continued review and revision.

1. Science Advisory Structure

The Science Advisory Structure of JOIDES will consist of a Planning Committee, a Technology and Engineering Development Committee, four thematic panels and five service panels. Ad hoc Detailed Planning Groups (DPGs) may be approved by the Planning Committee as requested by the panels or by the Planning Committee itself.

2. Committees, Panels, and Detailed Planning Groups

Each committee, panel and detailed planning group will operate under a mandate, along with guidelines as to membership and frequency of meetings. Mandates, guidelines, and amendments to them, for the standing panels, shall be proposed by the Planning Committee for approval by the Executive Committee. Mandates, guidelines and duration of operation for the short-lived Detailed Planning Groups will be specified by PCOM as required.

3. Planning Committee

3.1 General Purpose. The Planning Committee reports to the Executive Committee and advises JOI, Inc., the Science Operator and Wireline Services Operator, plans designated to optimize the scientific productivity and operational efficiency of the drilling program.

More specifically, the Planning Committee is responsible (a) for long term planning on the order of 5 to 10 years utilizing input from COSOD-type conferences and thematic panel input; (b) for developing a general science plan and general track of the drilling vessel about four years in advance of drilling; (c) for fostering communications among and between the general community, the panels, the Science Operator, the Wireline Logging Contractor and itself; (d) for soliciting, monitoring, and coordinating the evaluation of drilling proposals; and (e) for maintaining a 12 to 18 month scientific plan and for drafting a scientific drilling program at the Planning Committee Annual Meeting to be incorporated into the Program Plan for the next fiscal year.

3.2 Mandate. The Planning Committee is responsible for the mandates of the various panels, planning groups and ad hoc working groups and their membership. It approves their meetings and agendas and may assign special tasks to them. The Planning Committee sponsors and convenes COSOD-type conferences at intervals determined by long-term science plans for ODP. PCOM, through the JOIDES Office, assigns proposals to thematic panels, DPGs and, if relevant, to service panels, for review. PCOM sets the scientific objectives of the proposals into final priority

after they are reviewed by the panels. The Planning Committee nominates chief scientists to the Science Operator, who ultimately chooses them.

PCOM periodically reviews the JOIDES advisory structure in the light of developments in science and technology and recommends amendment of its panel structure and mandates. Much of the working of the Planning Committee is carried out by the commissioning of reports from the panels, the detailed planning groups, ad hoc subcommittees of its own membership, and by its chairman at the JOIDES Office.

- 3.3 **Structure.** The Planning Committee is empowered to establish an infrastructure appropriate to the definition and accomplishment of tasks described in its annual program plan as approved by the Executive Committee and the National Science Foundation.

Communication with the panels and active DPGs is maintained by having their chairmen meet with the Committee annually, and by assigning committee members as non-voting liaison members to its panels and working groups. Where counsel and communication are deemed important, other individuals may be asked ad hoc to meet with the Committee or a panel.

- 3.4 **Membership.** Each member of the Executive Committee shall designate one member of the Planning Committee and an alternate to serve in the absence of the designated member. One quarter of the Planning Committee members shall rotate off the Committee annually, so that its membership is replaced every four years. Reappointment shall be made only in exceptional circumstances. All appointees to the Planning Committee shall satisfy the fundamental criteria of having the ability and commitment to provide mature and expert scientific direction to the program. Balance of fields of specialization on the Planning Committee shall be maintained as far as possible. The chief scientists of the Science Operator and Wireline Logging Services Contractor, the JOI program director and an appointee of the NSF are non-voting, liaison observers.
- 3.5 **Organization.** The Planning Committee meets at least three times a year, normally in November, April and August, based on the timetable for producing the ODP Program Plan. Robert's Rules of Order govern its meetings.
- 3.6 **Vote and Quorum.** Within the framework of the Memoranda of Understanding with each non-U.S. participating country (or consortium designee), it is intended that the U.S. members shall constitute at all times at least a majority of members. Substantive issues decided by formal vote require the vote of a majority of all members. A quorum shall consist of at least two-thirds of the non-U.S. members and at least two-thirds of the U.S. members.
- 3.7 **Chairmanship.** The Chair of PCOM shall rotate with the JOIDES Office among the U.S. JOIDES institutions, excluding the Science Operator and Wireline Logging Services Contractor institutions. The term of office is normally two years.
4. **Thematic Panels**
- 4.1 **General Purpose.** Thematic Panels are mainly, but not exclusively, process orientated. They are established by the Planning Committee to develop scientific

drilling objectives based on COSOD-type conferences. The Thematic Panels play an important role in defining the long-term scientific objectives of ocean drilling.

Thematic Panels are composed of a number of members from U.S. institutions and one member from each non-U.S. participant. PCOM approves the panel membership including size and balance of expertise. Panelists will serve three years, with one-third of the panelists being replaced each year. The chairmen are appointed by PCOM. Thematic panels meet at least twice a year, but may meet more frequently as requested by PCOM. PCOM convenes the panel meetings and approves their meeting dates, locations, and agendas. The mandates are guidelines and do not restrict panels. Considerable overlap in thematic coverage has evolved and is expected to continue to evolve. The Planning Committee may ask Panels to take up topics not in their original mandates.

4.2 Specific Responsibilities. Each thematic panel will be responsible for planning the drilling of sites at the following levels:

- (a) Long-range identification of objectives and problems that are best solved by ocean drilling;
- (b) Review proposals submitted to JOIDES, followed by written evaluations to PCOM for each proposal reviewed;
- (c) Make recommendations for necessary site surveys needed to achieve the scientific objectives of a target area;
- (d) Make recommendations to PCOM for establishing Detailed Planning Groups for further developing drilling plans for specific target themes and/or regions;
- (e) Advise the Planning Committee on the selection of possible co-chief scientists;
- (f) Provide advice to PCOM on requirements for technical drilling operations, downhole measurements, and shipboard/shore-based sample handling (in consultation with the appropriate service panel, if necessary);
- (g) Provide advice to PCOM on technical development needs required to achieve long-range scientific objectives.

4.2.1 In the course of the work specified in paragraph 4.2, the Thematic Panels will maintain the close contact with the appropriate DPGs and provide PCOM with written evaluations of the recommendations made by these planning groups.

4.2.2 Each Thematic Panel is responsible to the Planning Committee, and will respond directly to requests from it, as well as reporting to it on a regular basis.

4.2.3 The Thematic Panels will act as a means of disseminating and correlating information in the appropriate problem areas by:

- (a) Monitoring the progress made by ODP cruise participants and other scientists on the results from shorebased research on samples;

encouraging shore-based laboratory work on samples recovered through ODP drilling;

- (b) Encouraging its members to contribute to symposia at which the results of drilling will be discussed;
- (c) Publishing progress reports in the open literature to inform and encourage participation in the project;
- (d) Generating "White Papers" as requested by PCOM;
- (e) Providing input to PCOM for the summary of scientific achievements of ODP for inclusion in the ODP Program Plan.

4.3 Lithosphere Panel: Mandate

The Lithosphere Panel is concerned with the origin and evolution of oceanic crust and mantle. In particular, important areas of investigation are volcanic, metamorphic, hydrothermal, structural and alteration processes occurring in the ocean crust. Also of importance to the Lithosphere Panel are mantle-crust interactions, mantle dynamics and composition, and solid-earth geochemical cycles.

- (a) Processes of submarine volcanology, intrusion and plutonism; crustal construction at spreading axes; petrology, geochemistry, mineralogy, and magnetic and other physical properties of igneous and metamorphic rocks from the ocean floor, from seamounts, from oceanic plateaus, from volcanic arcs and from basins adjacent to volcanic arcs.
- (b) Processes of submarine hydrothermal circulation; petrology, geochemistry and mineralogy of hydrothermally altered rocks and hydrothermal deposits from the ocean floor; geochemistry and physical properties of hydrothermal solutions; aging of ocean lithosphere.
- (c) Processes of mantle convection and melting and their relationship to basaltic rocks of the ocean basins. Mapping of mantle (geochemical) reservoirs and domains. Implications of solid earth geochemical cycles and fluxes of the global plate tectonic cycle. Mass balance problems.

4.4 Tectonics Panel: Mandate

Tectonics Panel is concerned with large-scale structural features and processes of deformation, including those active today at plate boundaries and those recorded in structures and sediments of former plate boundaries.

The Panel is also interested in the origin and evolution of large-scale constructional crustal features. The drilling-based tectonic studies that are evaluated and promoted by the Tectonics Panel fall into six groups, each listed below with some specific (but not exclusionary) examples:

- (a) Passive (extensional) margins - rifting history, rift-drift evolution and associated igneous activity, structure and origin of continent-ocean boundary zones; structural symmetry/asymmetry of conjugate margins; passive

margins in back-arc basins; structural variability along-strike; thermal and mechanical evolution; history of vertical crustal movements; post-rift subsidence, tectonism and sea-level history, their interrelations, and their effects on the sedimentary record; tectonic synchronicity.

- (b) Sheared (translational) margins - deformational history including crustal extension, shortening and vertical movements; structure and evolution of continent-ocean boundary zones; effect of tectonics on syn-rift and post-rift sedimentary record.
- (c) Active (convergent) margins - mechanics, kinematics, and mechanisms of deformation within accretionary wedges; thermal evolution and fluid flow; history of island-arc magmatism; sedimentation and deformation in fore-arc and back-arc basins; collision-associated deformation.
- (d) Divergent oceanic plate margins - structural evolution of mid-ocean ridge axes along "normal" spreading segments; origin and evolution of ridge-axis discontinuities (small offsets, overlapping spreading centers, transform faults, etc.); tectonic segmentation along mid-ocean ridges; origin of structural/tectonic asymmetries across spreading centers and ridge-axis discontinuities.
- (e) Origin and history of submarine plateaus, microcontinents, aseismic ridges, seamount chains, and other large-scale features constructed, fragmented, or deformed during ocean-basin evolution; history of vertical motion of these features and its relation to eustasy.
- (f) Plate driving forces and sub-lithospheric structures and processes: Global stress measurements to evaluate plate-driving forces; global seismic network to monitor stress accumulation and release and; measurements of rates and magnitudes of strain at active plate margins and at deforming zones within plates.

4.5 Ocean History Panel: Mandate

The Ocean History Panel is concerned with the historical aspects of the sedimentary record in the oceans. Specifically included are:

- (a) Long-term history and driving mechanisms of the evolution of the ocean, atmosphere and biosphere. Central to this theme are relations among plate tectonics and ocean paleocirculation, ocean paleoproductivity, global paleoclimates, glacial and ice-sheet evolution, sea level change and its effect on marine sedimentation and evolution of marine life.
- (b) Short-term variability of the earth's ocean circulation and climate and their relationship to boundary conditions and external forcing.
- (c) The processes and mechanisms of evolution of the marine biota.
- (d) The biostratigraphic record and its relationship to chronostratigraphy including radiometric dating, magnetostratigraphy, isotope and chemostratigraphy, lithostratigraphy and sequence stratigraphy.

4.6 Sedimentary and Geochemical Processes Panel: Mandate

This panel is concerned with marine sedimentation and diagenetic processes, origin and evolution of marine sediments and seawater chemistry, global sediment and geochemical mass balances, hydrothermal processes in sedimented regions. Specifically included are:

- (a) Sedimentary processes, facies and physical properties - The sedimentary processes of terrigenous, biogenic, volcanogenic and chemical sediments; sedimentation and tectonics, e.g. evolution of submarine fans, and evolution of basins; factors controlling the nature of sedimentary facies; the origin of unconformities, disconformities, hiatuses and sedimentary cycles; slope stability and redeposition and; physical properties of sediments.
- (b) Organic and inorganic sedimentary geochemistry and diagenesis - The rates and nature of early to late diagenetic processes; the evolution of sediment to rocks; geochemistry of interstitial and formation waters; petrology, mineralogy, magnetic and other physical properties, and geochemistry of diagenetic phases of bulk sediments; and chemical paleoceanography.
- (c) Temporal and spatial global mass balances of sediments and cycling of elements - How much and what types of sediments are being subducted; relationship of sediments to tectonic and paleoceanographic processes such as sea level fluctuations and anoxic events; unconformities and disconformities; the carbon, sulfur and phosphorus cycles; marine evaporites in early rifting systems and evaporite giants.
- (d) Fluid circulation and geochemical budgets - Magnitudes and rates and plumbing systems of gravity and tectonically driven circulation in passive and active continental margins; chemical fluxes, biological activity, physical, mineralogical and geochemical alteration of margin sediments induced by fluid flow; interaction between submarine hydrothermal fluids and sediments, mineralogy, petrology, physical and geochemical properties of the hydrothermally altered sediments, and the geochemical evolution of the hydrothermal fluids; the origin and distribution of base metal deposits in continental margins and sedimented hydrothermal systems.
- (e) The aging of the oceanic crusts - Low to moderate temperature alteration of oceanic crust; rates and types of reactions and associated chemical fluxes; changes in physical properties and fluid circulation with age.

5. Technology and Engineering Development Committee: Mandate

The Technology and Engineering Development Committee (TEDCOM) is responsible for recommending to the Planning Committee the proper drilling tools and techniques to meet the objectives of ODP drilling targets, especially those for achieving highly-ranked objectives identified in ODP long-range planning.

TEDCOM identifies, within a proper time frame and within budgetary constraints, the new drilling tools/techniques to be developed, helps JOI and the Science Operator write RFPs for engineering firms which lead to the development of the tools/techniques, and monitors the progress of their development.

Members of the TEDCOM are engineers nominated by PCOM. Liaison should be maintained between TEDCOM and the Downhole Measurements Panel. An ODP/TAMU engineer is assigned to act as Science Operator liaison with TEDCOM.

6. Detailed Planning Groups: Mandate

6.1 General Purpose. Detailed Planning Groups are short-lived planning groups which may be created by the Planning Committee, in response to requests by the Thematic Panels or by the Planning Committee itself, for more intensive study of certain aspects of planning that may arise. The Detailed Planning Groups will be held to the minimum necessary membership and travel expenses. DPGs provide written documents to those thematic panel(s) specified by PCOM. The DPG documents are transmitted to PCOM with the written evaluation of the appropriate thematic panel.

6.2 Structure of Detailed Planning Groups.

The Detailed Planning Groups are responsible for:

- (a) Helping Thematic Panels to translate their broad thematic programs and highly-ranked ODP proposals into concrete drilling plans;
- (b) Recommending integrated drilling programs for their assigned topics and regions of interest;
- (c) Advising on regional and site surveys needed for future drilling;
- (d) Preparing drilling prospectuses which synthesize all thematic and site survey input.

6.3 Membership. PCOM chooses DPG members for their expertise and experience with respect to the assigned thematic topics and in regions where these topics can be addressed. Members are recommended by the thematic panels and by PCOM and are appointed by PCOM or by the PCOM Chairman if necessary. The chairmen are appointed by PCOM.

The DPGs are composed of a number of members from U.S. institutions, and should maintain full representation, if possible, from the non-U.S. JOIDES institutions. A maximum number of 16 members is suggested.

Active DPGs meet at the request of PCOM as frequently as required by ship scheduling and routing. PCOM establishes liaison between standing DPGs and Thematic Panels by the appointment of non-voting liaisons.

7. Service Panels

7.1 General Purpose. Service Panels provide advice and services to the JOIDES Advisory Structure, and to the various entities responsible for the processing, curation and distribution of samples, data and information (including publications) to the scientific community. The Service Panels can respond to specific requests from the Science Operator, the Wireline Logging Contractor, or JOIDES panels, but in all cases, must report their findings to the Planning Committee as well. When recommendations from the service panels involve fiscal decisions or major programmatic changes, these must be channeled through PCOM.

The Service Panels, beyond their help to the JOIDES Advisory Structure, are not directly involved with selection of drilling targets or definition of cruise objectives.

Service Panels have specific mandates. Service panels meet at least once a year or as requested by PCOM.

- 7.1.1 **Membership.** PCOM appoints the chairman and panelists and keeps membership, including representation from the non-U.S. JOIDES member institutions, under review. The Chairman serves at the pleasure of PCOM, and members serve at the pleasure of PCOM or their non-U.S. appointing member. Representation from all non-U.S. members should be maintained. Panel membership, not to exceed 15, should be maintained as small as is allowed by the range of expertise necessary to meet mandate requirements.

7.2 Site Survey Panel: Mandate

- 7.2.1 **General Purpose.** The general purpose of the Site Survey Panel is to provide information and advice to the Planning Committee on the adequacy of and need for site surveys in relation to proposed drilling targets.

- 7.2.2 **Mandate.** The Site Survey Panel is mandated to:

- (a) Review site survey data packages prepared by the ODP Site Survey Databank and to make recommendations as to their adequacy to the Planning Committee in light of the needs defined in mature proposals of the Detailed Planning Groups and thematic panels;
- (b) Identify data gaps in proposed future drilling areas and to recommend appropriate action to ensure that either 1) sufficient site survey information is available for pinpointing specific drilling targets and for interpretation of drilling results, or 2) that sites not be drilled;
- (c) Provide guidelines for proponents and panels as to required site survey data and to examine the opportunities and requirements for the use of new technologies for surveying potential drill sites;
- (d) Promote international cooperation and coordination of site surveys for the benefit of the Ocean Drilling Program, particularly between participating ODP nations' survey activities;
- (e) Promote the lodging of all data used for planning drilling targets with the ODP Databank.

- 7.2.3 **Liaison.** The Panel maintains liaison with the ODP Site Survey Data Bank Manager and the non-U.S. liaison at the JOIDES Office, who both attend SSP meetings.

7.3 Pollution Prevention and Safety Panel: Mandate

- 7.3.1 **General Purpose.** The general purpose of the Pollution Prevention and Safety Panel is to provide independent advice to the Planning Committee and to the

Ocean Drilling Program with regard to safety and pollution hazards that may exist because of general and specific geologic circumstances of proposed drill sites.

- 7.3.2 **Mandate.** All drilling operations involve the chance of accident or pollution. The principal geologic safety and pollution hazard in ocean drilling is the possible release of substantial quantities of hydrocarbons from subsurface reservoir strata. In most deep sea regions, the risk of hydrocarbon release can be reduced or eliminated by careful planning and proper site surveys. Additionally, safety problems may arise in drilling hot hydrothermal systems for lithosphere targets.

Those who plan each Ocean Drilling Program cruise and select its drilling sites are initially responsible to propose only sites that are considered reasonably safe. The JOIDES Pollution Prevention and Safety Panel independently reviews each site to determine if drilling operations can be conducted safely.

The preliminary site survey information and the operational plan are reviewed for each site. Advice is communicated in the form of: (1) site approval, (2) lack of approval, or (3) approval on condition of minor site relocation or amendment of the operational plan. Approval is based on the judgment of the Panel that a proposed site can be safely drilled in light of the available information and planning.

- 7.3.3 **Liaison.** The Pollution Prevention and Safety Panel maintains liaison with the Site Survey Panel, and a designated SSP member attends its meetings. A representative from the Science Operator also attends the meetings. The Planning Committee Chairman is a non-voting member of the Panel and normally attends meetings.

7.4 Information Handling Panel: Mandate

- 7.4.1 **General Purpose.** The general purpose of the Information Handling Panel is to provide information and advice to the Planning Committee and the Ocean Drilling Program with regard to satisfying the needs of the scientific community for timely access to data, samples and publication and to assist program managers in setting priorities.

- 7.4.2 **Mandate.** The Information Handling Panel is mandated to advise PCOM on:

- (a) Types of publications to be produced; publication formats; schedules and deadlines; publications policy and goals of the ODP publications program;
- (b) The operation of the core repositories; curatorial policy; filling of sample requests; curatorial data management; long-term goals for the preservation of the core materials and other physical samples obtained by ODP and DSDP; and establishment and operation of the various micropaleontology reference centers;
- (c) The types and contents of the databases to be maintained by ODP; treatment of raw data; establishment of uniform procedures and standards for data handling and processing; structure, philosophy and goals of the information systems produced by the program; and management of

databases, information systems and data centers. This last topic also includes coordination between various data centers established by ODP and those for DSDP archives;

- (d) The minimum standards of quality and completeness necessary for data to be included in the various data bases and information systems, including data recording, transcribing and checking procedures;
- (e) Shipboard and shore-based computer facilities, equipment and procedures; software development; data collection techniques; and meeting the computational needs of shipboard and shore-based scientists, as well as providing access to data bases for all interested parties. Input from the Shipboard Measurements Panel on these issues, if necessary, should be reviewed;
- (f) Long-term preservation of the raw data generated by ODP and DSDP; preservation of all past records bearing on sample history; and preservation of any other records of the program which might benefit future workers;
- (g) The relationship between the ODP and DSDP data centers and national depositories such as the National Geophysical Data Center, World Data Center A for Marine Geology and Geophysics, etc., and the fulfillment of statutory obligations for data transfer. It also includes transfer of data to data centers established by ODP member countries, such as the one in France, and to the Micropaleo Reference Centers.

7.5 Downhole Measurements Panel: Mandate

7.5.1 General Purpose. The general purpose of the Downhole Measurements Panel is to advise JOIDES on methods and techniques for determining the physical state, chemical composition, and dynamic processes in ocean crust and its sediment cover from downhole measurements and experiments. Areas of responsibility include: routine logging (including industry standard and special tools widely used in ODP); routine data processing and interpretation; new and adapted logging tools, techniques, and data processing; downhole experiments and data acquisition (including downhole recording).

7.5.2 Mandate. The Downhole Measurements Panel is mandated to:

- (a) Report to and advise PCOM on logging and downhole measurement programs of ODP;
- (b) Advise on and recommend to the ODP Wireline Service Contractor the required logging facilities;
- (c) Advise PCOM on the the scientific desirability and technical feasibility of proposed programs;
- (d) Monitor progress reports, results, tools and techniques from U.S. and international downhole instrumentation development groups;
- (e) Solicit and expedite new logging capabilities and experiments;

(f) Evaluate new technology and recommend future measurement directions.

7.5.3 **Membership.** Membership consists of a well-balanced representation with approximately half being logging and other downhole technologists and half having scientific backgrounds and interests. The Wireline Services Operator and Science Operator of ODP shall each be represented by non-voting members on the Panel.

7.6 **Shipboard Measurements Panel: Mandate**

7.6.1 **General Purpose.** The Shipboard Measurements Panel is concerned with the inventory, operation, condition of scientific instrumentation on board the JOIDES RESOLUTION and data handling for onboard measurements.

7.6.2 **Mandate.** The objectives of the panel are:

- (a) To provide expert advice and make recommendations to the Planning Committee regarding the inventory and utilization of scientific equipment on the drillship;
- (b) To represent the interests of the ODP user community with respect to the scientific procedures and equipment on the RESOLUTION;
- (c) To direct panel activities, via PCOM, toward acquiring and maintaining the best possible shipboard scientific capability within the constraints of the ODP budget.

The panel is concerned with general types of instrumentation and issues:

- (a) Underway geophysical equipment;
- (b) Equipment for handling core samples;
- (c) Physical properties, paleomagnetism and geotechnical measurements;
- (d) Petrological, mineralogical, sedimentological, biological, paleontological, micropaleontological, organic and inorganic geochemistry analysis and equipment for performing these measurements such as microscopes;
- (e) Computers managing data from shipboard equipment (in consultation, if necessary, with the Information Handling Panel);
- (f) Utilization of laboratory space on the RESOLUTION.

7.6.3 **Membership.** The panel will consist of members from U.S. institutions and from non-U.S. JOIDES members or consortiums. Representation from all non-U.S. members should be maintained, if possible. The number of members should not exceed 15 and these should be appointed so as to represent the range of disciplines within the scope of the panel's activities.

Ideally, a majority of those serving on the panel should have participated on a cruise of the RESOLUTION.

- 7.6.4 **Liaison.** The SMP must maintain continuing liaison with the Planning Committee, the Science Operations of ODP/TAMU (in consultation with ODP/TAMU marine technicians and engineers), the Information Handling Panel, and the Downhole Measurements Panel. Ex-officio liaison representatives of these panels and organizations should attend each meeting.
- 7.6.5 **Scheduling.** As the SMP will normally not deal with time-critical issues, two meetings per year should suffice. Meetings at ODP/TAMU in College Station at regular intervals is recommended and occasional meetings that include a visit to the RESOLUTION would be valuable.

Ratified by EXCOM: 15 September 1988; Amended 1 June 1989; 3 October 1989
Adopted by JOI Board of Governors: 15 September 1988; Amendments Adopted 2 June 1989;
4 October 1989

A. U.S. Representation in JOIDES Advisory Structure*

JOIDES Institutions	54 positions	5 Chairmen
Non-JOIDES Institutions	32 positions	3 Chairmen
Industry	16 positions	0 Chairmen
Government Labs	11 positions	1 Chairman
Total U.S.	113 positions	9 Chairmen

Non-U.S. Representation in JOIDES Advisory Structure*

Non-U.S. Partners	93 positions	7 Chairmen
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*Including PCOM, EXCOM, BCOM & DPGs

B. U.S. JOIDES Institution Representation on Panels

<u>Institution</u>	<u>Thematic</u>	<u>Service</u>	<u>DPG, etc.</u>	<u>Total</u>
Lamont	1 OHP 2 SGPP 1 TECP	1 SSP	1 EPRDPG 1 CEPDPG	7
OSU	1 OHP 1 SGPP	0	1 CAPDPG	3
TAMU	0	1 IHP	1 EPRDPG	2 (1 ODP)
Scripps	1 OHP	1 DMP 1 IHP	0	3
HIG	1 LITHP	1 DMP 1 SMP 1 SSP	1 CEPDPG	5
Miami	0	0	0	0
URI	0	1 SMP	1 EPRDPG	2
Texas	1 TECP (Chr)	0	0	1
Washington	0	0	1 EPRDPG	1
Woods Hole	1 LITHP (Chr) 1 OHP 1 TECP	1 SMP	2 EPRDPG	6 (4 persons)

C. U.S. Non-JOIDES Institutions Representation on Panels

3	Cornell Univ. - CAPDPG (Chr), DMP, LITHP (2 persons)
1	Florida International Univ. - OHP
2	Lehigh Univ. - CAPDPG, DMP (1 person)
1	Massachusetts Inst. Tech. - LITHP
1	Northwestern Univ. - CEPDPG

- 1 Pennsylvania State Univ. - OHP
- 2 Rice Univ. - OHP, TECP
- 1 St. Louis Univ. - LITHP
- 1 State Univ. of N.Y., Stony Brook - SGPP
- 2 Univ. of California, Davis - LITHP, TECP
- 1 Univ. of California, Los Angeles - IHP
- 1 Univ. of California, Santa Barbara - TECP
- 5 Univ. of California, Santa Cruz - CAPDPG (2), SGPP, TECP, OHP
(3 persons)
- 1 Univ. of Colorado - SGPP
- 1 Univ. of Florida - LITHP
- 1 Univ. of Illinois - CEPDPG
- 1 Univ. of Massachusetts - SMP
- 2 Univ. of Michigan - CEPDPG (Chr), IHP (Chr)
- 1 Univ. of North Carolina - EPRDPG
- 1 Wesleyan Univ. - SMP
- 1 Western Washington State Univ. - TECP
- 1 Yale - CAPDPG

D. U.S. Government Laboratories Representation on Panels

- 1 NOAA, National Geophysics Data Center - IHP
- 1 Oak Ridge - ERPDPG
- 1 Sandia - DMP
- 8 USGS - SEPDPG, DMP, IHP, LITHP, PPSP (Chr), SGPP, SSP, TECP

E. U.S. Industry Representation on Panels

- 2 AMOCO - DMP, TEDCOM
- 1 BP Exploration - PPSP
- 1 Chevron - TEDCOM
- 4 EXXON - OHP, PPSP, SSP, TEDCOM
- 4 Independents - DMP, PPSP, TEDCOM (2)
- 1 Longyear - TEDCOM
- 2 Mobile - PPSP, TEDCOM
- 1 Texaco - PPSP