

JOIDES Executive Committee

2 - 4 October 1990
Laboratoire de Géodynamique Sous-marine
Villefranche-sur-Mer, France

Agenda for Meeting

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<i>Tuesday 2 October 9:00</i>	
A. <u>Initial Business</u>	005
1. Introductions and Opening Remarks	
2. Adoption of Agenda	
3. Approval of Minutes of Previous Meeting	
B. <u>Long-term Program Objectives (1992 and beyond)</u>	005
1. Perspective for renewal (all members)	
2. Aiding the renewal process	
<i>(Coffee and Tea, 10:15 - 10:30)</i>	
C. <u>Near-term planning (remaining part of FY89-92 Program)</u>	006
1. Status of Ocean Drilling Program (NSF Report)	
2. Program Management (JOI Report)	
<i>(Lunch, 12:00 - 13:15)</i>	
3. Near-term Scientific Objectives (PCOM)	
<i>(Coffee and tea, 15:00 - 15:15)</i>	
4. Engineering Developments (special report, ODP-TAMU)	
5. Near-term Scientific and Technological Planning (PCOM)	
<i>Recess</i>	
 <i>Wednesday 3 October</i>	
<i>Field Trip</i>	

Thursday 4 October 9:00

- D. Present Operational Status of the Ocean Drilling Program 008
1. Science Operator Report (ODP-TAMU)
 2. Wireline Logging Services Report (ODP-LDGO)

(Coffee and tea, 10:15 - 10:30)

- E. Member Country Reports 008
1. Federal Republic of Germany
 2. United Kingdom
 3. France
 4. Canada-Australia Consortium
 5. European Science Foundation Consortium
 6. Japan
 7. United States

(Lunch, 12:00 - 13:15)

- F. EXCOM Action on Near-Term Planning 009
1. Filling BCOM (and set its date and venue)
 2. Other Action (from discussions during the meeting)

- G. Future Meeting Schedule 009
1. Spacing the two EXCOM meetings per year
 2. Meetings in 1991

- H. Other Business

Adjournment

Friday, 5 October 1990; time and venue to be announced:

JOI Board of Governors Meeting

this meeting may commence Thursday afternoon if the EXCOM meeting adjourns sufficiently early

Attachments**Page Number**

Guide through the Agenda (green)	005
EXCOM Revised Draft Minutes, 20-22 June, 1990, Washington, DC	011
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JOIDES Executive Committee

2 - 4 October 1990

**Laboratoire de Géodynamique Sous-marine
Villefranche-sur-Mer, France**

Agenda Briefing Material

Tuesday 2 October 9:00

C. Helsley will chair the meeting.

A. Initial Business

1. Introductions and Opening Remarks (G. Boillot)

Welcoming remarks, introductions of members and guests, and comments about logistics. The host will suggest times for coffee breaks, lunch, and meeting times if the times listed in the agenda are not appropriate.

2. Adoption of Agenda

As has been common at recent EXCOM meetings, the order of business is to consider first the long-range future of ODP, followed in more detail by the immediate future, the present status, and the immediate past. Each section of the agenda should have sufficient time for presentation of information, discussion of important issues, and identification of items for EXCOM action.

There will be a call for additional items, and then a call for adoption of the Agenda.

3. Approval of Minutes of Previous Meeting

The Revised Draft Minutes (attached) of the Joint meeting of EXCOM and the ODP Council, and of the EXCOM Business Meeting, 20-21 June 1990, in Washington, DC, USA, have corrections and additions received at the JOIDES Office through 12 September.

There will be a call for additional corrections or additions, and then a call for approval of the minutes.

B. Long-term Program Objectives (1992 and beyond)

1. Perspective for renewal (all members)

At the Washington meeting, there was a round of comments by all partners on the status and time-tables for planning in each of the countries and consortiums, and an expression of concerns regarding

the renewal process. Each member will be requested to bring EXCOM up to date on any new developments.

2. Aiding the renewal process

JOI and PCOM can comment on recent developments from their perspectives. JOI had agreed to coordinate efforts and provide materials if partners request JOI to do so. Here members can discuss what kinds of additional materials might be needed. PCOM's ad hoc committee to consider renewal strategy will have met the week before this EXCOM meeting, and a brief report can be given.

(Coffee and Tea, 10:15 - 10:30)

C. Near-term planning (remaining part of FY89-92 Program)

1. Status of Ocean Drilling Program (NSF Report)

- a. Resource issues and budget status
- b. Membership

2. Program Management (JOI Report)

- a. Program Plan
- b. Preparation for the next performance evaluation
- c. Interaction with international global geoscience initiatives
- d. Support for new technology
- e. Other developments

(Lunch, 12:00 - 13:15)

3. Near-term Scientific Objectives (PCOM)

There will be a brief presentation of the scientific objectives of drilling in Fiscal Year 1991, in light of recent adjustments to the Program Plan (see PCOM draft minutes, attached). Then the method of selecting the Program Plan for FY 92 will be described, along with the 11 candidate legs in competition for 5 or 6 positions on the schedule.

- a. Pacific legs in FY 91
 - Leg 134, Vanuatu Collision
 - Leg 135, Lau Basin and Tonga Forearc
 - Leg 136, Seismometer Test Hole, Hawaii
 - Leg 137, Engineering III, at Hole 504B
 - Leg 137, Eastern Equatorial Pacific Neogene

- Leg 138, Sedimented Ridges I
- Leg 139, Lower Crust at 504B
or Joint Engineering IV-Science Leg, East
Pacific Rise Bare-rock Drilling I

b. Pacific legs in FY 92: At the November 1990 Annual Meeting six legs will be chosen from among:

- *Atolls and Guyots I or I and II*
- Bering Sea History
- Cascadia Accretion
- Chile Triple Junction I or I and II
- East Pacific Rise Bare-rock Drilling II
- Gas Hydrate Formation
- Hess Deep
- North Pacific Transect
- Sedimented Ridges II

(Coffee and tea, 15:00 - 15:15)

4. Engineering Developments (special report, ODP-TAMU)

Barry Harding will present the current status of development of techniques and tools for drilling and coring. There is considerable interest in the diamond coring system and in the prospects for drilling deeper than 2 km below the sea floor in deep water. In addition, there have been recent important engineering developments relative to the vibra-percussive corer, the pressure core sampler, and other tools.

5. Near-term Scientific and Technological Planning (PCOM)

a. A Deep Drilling Working Group was formed to provide advice and cost estimates for drilling more than 2 km below the sea floor in deep water. This working group is an outgrowth of TEDCOM. It will have met about one week before this EXCOM meeting. A Sealevel Working Group was formed to prepare a strategy for attacking the range of sealevel problems that may be addressed by ocean drilling. It will meet a few months from now.

b. In about October 1992 the JOIDES Resolution will move to the Atlantic. Two planning groups have been established, to assist PCOM by recommending sites and priorities from proposals in that area that were highly-ranked by the thematic panels: a North

Atlantic Arctic Gateway Detailed Planning Group, and a North Atlantic Margins Detailed Planning Group. The first 6 North Atlantic legs will be selected at the November 1991 Annual Meeting.

c. Planning the general direction of the vessel four years in advance of drilling will be refined each Spring by PCOM, by any adjustments to the three years that remain from the previous Spring decision, and by adding the new fourth year.

d. Current proposals are appended. They and other planning issues can be discussed.

Recess

*Wednesday 3 October
Field Trip*

Thursday 4 October 9:00

D. Present Operational Status of the Ocean Drilling Program

1. **Science Operator Report (ODP-TAMU)**
 - a. Principal drilling results since June 1990
 - b. Status of publications
 - c. Other problems and progress
2. **Wireline Logging Services Report (ODP-LDGO)**
 - a. Principal logging results in the western Pacific
 - b. Status of the Borehole Research Group

(Coffee and tea, 10:15 - 10:30)

E. Member Country Reports

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

(Lunch, 12:00 - 13:15)

F. EXCOM Action on Near-Term Planning

1. Filling BCOM

B. Lewis has retired from the Budget Committee and its chairmanship. EXCOM needs to select a US EXCOM member to replace Lewis, and also needs to set the date and venue of its spring 1991 meeting.

2. Other Action (from discussions during the meeting)

G. Future Meeting Schedule

1. Spacing the two EXCOM meetings per year

Previous comments suggested that the spacing of time between the two EXCOM meetings per year should be more balanced. BCOM has, in effect, replaced the spring meeting. If BCOM cannot resolve a problem, EXCOM can be called to meet, but that has not occurred in practice. At present more than 8 months may elapse between the early fall and early summer EXCOM meetings. Should the times be adjusted? A suggestion of moving to November or December may impinge on the ability of the JOIDES Office to arrange for both it and the PCOM Annual Meeting.

2. Meetings in 1991

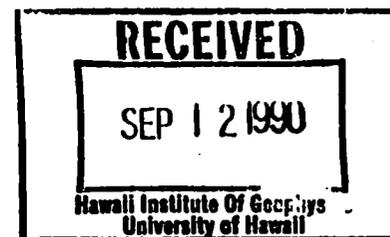
Related to the issue of balance is that of the next meeting of EXCOM and the ODP Council. It was expected that the *JOIDES Resolution* would be in San Diego, California, in late June, and Scripps Institution of Oceanography offered to host the meeting there. The present schedule, which was received by the JOIDES Office too late to inform EXCOM and the ODP Council before the 1 September date they had requested, calls for a 5-9 July 1991 port call in Los Angeles, California (see attached). Choices for EXCOM include: (a) meet in San Diego in June as invited, but miss the ship; (b) meet in San Diego in early July and travel to Los Angeles to visit the ship; (c) meet in Los Angeles in early July and visit the ship; (d) meet in Honolulu in March and visit the ship (too early for EXCOM to approve a Program Plan); (e) something else.

EXCOM should also decide on a date and venue for its fall 1991 meeting.

H. Other Business

Adjournment

ODP OPERATIONS SCHEDULE



90-401

<u>Leg</u>	<u>Cruise Dates</u>	<u>Days at Sea</u>	<u>In Port</u>
133 - NE Australia	09 August-11 October 1990	62	Townsville 11-15 Oct 90
134 - Vanuatu	16 October-17 December 1990	62	Suva 17-21 Dec 90
135 - Lau Basin	22 December 1990 - 18 February 1991	58	Suva 18 Feb 91 (Crew Change)
136 Transit	19 February - 1 March 1991	10	Honolulu 1-3 Mar 91
OSN-1	04 March - 21 March 1991	17	Honolulu 21 Mar 91 (Crew Change)
137 Engineering 3A	22 March - 01 May 1991	40	Panama 01-05 May 91
138 E. Equatorial Pacific	06 May - 05 July 1991	60	Los Angeles 05-09 July 91
139 Sedimented Ridges I	10 July - 11 September 1991	63	Victoria 11-15 Sept 91
140 Engineering 3B	16 September - 13 November 1991	58	Panama 13-17 Nov 91

Revised 6 September 1990

TJG7

**JOINT MEETING OF THE JOIDES EXECUTIVE COMMITTEE AND
OCEAN DRILLING PROGRAM COUNCIL
June 20-21, 1990
Ramada Renaissance Hotel, Washington, D.C.**

REVISED DRAFT MINUTES

Executive Committee (EXCOM):

C. Helsley, Chairman - Hawaii Institute of Geophysics
 T. Asai - ORI (Japan)
 G. Boillot - Université Pierre et Marie Curie (France)
 J. Briden - NERC (United Kingdom)
 D. Caldwell - Oregon State University
 C. Dorman - Woods Hole Oceanographic Institution
 H. Dürbaum - BGR (Federal Republic of Germany)
 D. Kent - Lamont-Doherty Geological Observatory
 W. Merrell, Jr. - Texas A&M University
 M. Moss (for E. Frieman) - Scripps Institution of Oceanography
 A. Nowell (for G. Heath) - University of Washington
 B. Rosendahl - University of Miami
 R. Riddihough - Geological Survey of Canada (Canada-Australia Consortium)
 J-G. Schilling (for R. Duce) - University of Rhode Island
 P. Stoffa (for A. Maxwell) University of Texas Institute for Geophysics
 L. Westgaard - Royal Norwegian Embassy (ESF Consortium for Ocean Drilling)

ODP Council Members (not included on JOIDES EXCOM):

M. Fratta - European Science Foundation (France)
 D. Heinrichs (National Science Foundation)
 D. Maronde - Deutsche Forschungsgemeinschaft (Federal Republic of Germany)
 J. Michot - Univ. Libre de Bruxelles (Belgium)

Liaisons:

R. Anderson (Wireline Logging Services)
 D. J. Baker (Joint Oceanographic Institutions)
 R. Moberly (Planning Committee)
 P. Rabinowitz (Science Operator)

Guests and Observers:

J. Austin - University of Texas at Austin
 B. Biju-Duval - IFREMER (France)
 G. Gross - National Science Foundation
 E. Kappel - Joint Oceanographic Institutions, Inc.
 K. Kobayashi - ORI (Japan)
 J. Ladd - National Science Foundation
 M. Leinen - University of Rhode Island
 B. Malfait - National Science Foundation
 P. Peters - Joint Oceanographic Institutions, Inc.
 T. Pyle - Joint Oceanographic Institutions, Inc.

JOIDES Office:

P. Cooper - Science Coordinator
 L. d'Ozouville - Executive Assistant and Non-US Liaison

**Joint Session of ODPC and JOIDES EXCOM
Wednesday, 20 June 1990**

484 INITIAL BUSINESS

The meeting was brought to order at 9:10 AM as C. Helsley bid everyone good morning and welcomed EXCOM members to the joint meeting of the JOIDES Executive Committee (EXCOM) and Ocean Drilling Program Council (ODPC); he explained that this session will be jointly chaired by himself and D. Heinrichs, NSF. Welcoming remarks by D. Heinrichs, including an explanation of the meeting schedule for JOI Board of Governors and ODPC, were followed by introductions around the table. Following adjournment of the joint session sometime on June 21 afternoon, the EXCOM will meet separately to make programmatic decisions; the Council and JOI Board of Governors will meet separately the morning of June 22.

J. Baker welcomed everyone on behalf of JOI and explained the logistics of the meetings and events; he thanked Penny Peters (JOI) for making arrangements for the dinner and reception hosted by JOI Board of Governors.

ADOPTION OF AGENDA

C. Helsley explained the agenda book format to new EXCOM and ODPC members and reminded EXCOM members to keep track of all action items.

EXCOM Motion

EXCOM adopts the agenda for the 20-21 October 1990 joint Executive Committee and ODP Council meeting. (Motion C. Dorman, second M. Moss)

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

485 FUTURE OF THE OCEAN DRILLING PROGRAM

PERSPECTIVE FOR A POST-1993 PROGRAM

J. Baker (JOI) offered a brief summary of the ODP National Science Board (NSB) presentation from March, 1990: ODP - what it is, where it is and where it's going. Similar presentations will be made in the future. Baker introduced the topics and 4 speakers to NSB: Ruddiman (paleoclimate); Fryer (tectonics); Worthington (technology of logging), and Piasis (Long Range Plan). The presentation was well received.

Baker's introduction noted that ocean drilling had been suggested as early as 1888 by Charles Darwin, while the first proposal to drill around the deep oceans was by Jagger in the 1940's. In 1957 the theme was picked up to drill to Moho, and finally expanded through DSDP to the ocean drilling program in operation today. The introduction summarized major discoveries of ocean drilling including the youthfulness of ocean floors; direct evidence for seafloor spreading; modern surprises include unexpectedly high crustal temperature measurements and sampling of oldest (Jurassic) crust.

The breadth of the program was illustrated by an introduction to ODP organizational, advisory and financial support; a description of the drill ship and modes of operations; membership; actual accomplishments (number of holes and statistics; samples distributed, etc); reporting of scientific results (publications); emphasis that the larger *JOIDES*

Resolution has allowed greater student participation, i.e. training of future program participants. The program has an important emphasis on education.

Also included: The future of ODP as determined by COSOD meetings where a variety of objectives are laid out; the importance of membership participation (one point made to the board was the importance of including the U.S.S.R. as a partner); interaction with global programs such as RIDGE (Ridge Interdisciplinary Global Experiments); and new platform development and its effects on future program planning were discussed. A summary of the Long Range Plan (LRP) finished the NSB presentation. The duration of the formal presentation was about 2 hours, followed by a question and answer period.

Discussion

In response to questioning by Biju-Duval, Baker explained that 24 persons sit on NSB; about 2/3 of those were present, plus several upper level administrators; 24 persons attended the presentation. Heinrichs emphasized that the presentation was meant to update and inform, stating that ODP would be returning in about a year requesting extension of the program. The program has run very well, so ODP hasn't been before the board recently.

FRAMEWORK FOR RENEWAL

Timelines

The current timeframe for ODP renewal actions is same as that presented at the October 3-4 1989 EXCOM meeting. D. Heinrichs stated that EXCOM must discuss the post-1993 program; we are in a transition phase on programs from governmental and science planning functions, working on what is currently planned and taking the necessary lead time for long-term actions. D. Heinrichs summarized progress toward renewal: the NSB presentation has been made; we have informed the science boards that we do expect to come back to them formally in late 1991 (or early 1992) with a request for an extension of the program, keyed on agreements with international partners on the scope, scale and content of the program. The commitment at the research directorate level is that NSF does view that the program should continue. We will need to have an external review, but ODP has strong support from Bob Corell.

Discussion:

H. Dürbaum wished to know what is the role of US Academy of Sciences in the program (he had read a very critical letter from R. Coleman). Heinrichs responded that when we have a specific plan that puts in context the support organization and goals of the next phase of drilling, the NSF will convene a broadly based panel of geoscientists to look at where drilling fits into geosciences. NSF also will solicit comments from our Academy of Sciences, which will involve two geoscience committees - the Ocean Studies Board and the Board on Earth Sciences and Resources. Coleman is a member of the Board on Earth Sciences and Resources and is working on an independent study of the geosciences supported by the Keck Foundation and his comments are, in Heinrich's opinion, personal and not the opinion of the Academy of Sciences. Baker added that the Academy of Sciences will be involved in a review of the Ocean Drilling Program.

C. Helsley and D. Heinrichs then requested a brief update from member countries on the status of planning from members and their concerns regarding renewal.

J. Briden stated that the UK financial year is out of step with the US fiscal year, and this tends to stretch out the process. In order to get new money in place for Oct. 1, 1993 the

money must actually be in place by April 1 of that year. This requires a commitment from NERC by about Nov. 1991. If no significant new money is indicated, *i.e.* a continuation with something like the present financial implications, then NERC could make its commitment at that time. Briden anticipated that NERC would not agree to substantial increase in funding from the funds it already has, and would have to bid for new money to supplement it. In that case it would not know the answer until November 1992.

D. Maronde mentioned that at the last meeting in Amsterdam, he had discussed the preparation of a German brochure based on the LRP with respect to German participation in the last years and giving an outlook for future participation. Response in the German marine science community was very positive, including intensive discussion of ODP at a symposium in Bremen earlier this year. This brochure will be printed soon. Timing depends on the new situation in FRG. Maronde asked Heinrichs when ODP will start discussions with partners; there is no problem if conditions do not change. Heinrichs replied that informal discussions will continue into 1991, when there will be formal letters. He applauded that the FRG seems to have a stronger commitment to continue the program than the US does! The very positive informal comments from BMFT suggest that the US may be a little too slow for FRG.

L. Westgaard reported that a meeting of the Management Committee (EMCO) of the ESF Consortium took place about a week ago to establish a time table. As soon as the LRP is distributed and the results of this meeting are known, whatever is needed will take place in the countries according to their individual requirements and procedures that differ quite a lot. There will first be a statement of scientific issues and wishes of the scientists in the ESCO early next year. That should be positive, barring too many changes in orientation. After this, the management committee will meet again in spring or summer 1991 and from then on there will be a formal contact to the twelve members. If all comes out positive, in the first half of 1992 a formal MOU will be prepared. In this time scale, if all comes out right, we will be ready. There are some worries regarding the time scale, since budgets for some countries have deadlines in Jan 1. R. Anderson wished to know if any Eastern European countries would join ESF? M. Fratta answered, stating that some contacts have been made already. One or two countries may ask formally to become members of ESF, but nothing has been decided.

B. Biju-Duval reported that after the Oct. 1989 EXCOM meeting, there were several meetings in France regarding the future of the program; because of NEREIS, France has some scientific and political debate regarding future participation in ODP and the French ODP Executive Board discussed the matter last April. It is clear that we are just in time for looking to the future and to prepare the documents for the decision-making level. He stressed five points:

- (1) Consensus about interest: There is no question about the importance of future involvement in ocean drilling in general, and France expects to continue.
- (2) We must take into account criticisms which emerged during these different meetings; uncertainties about the level of possible French participation post-1993; if there is no change in the program, then we have to reconsider.
- (3) We have to consider our participation in deep drilling with respect to other options in earth and ocean science - imagery, on-station studies, and submersible activity. There could be a debate to find some balance among these marine programs. It has been clearly said that there must be no scientific competition between the NEREIS initiative and ODP but budget levels for such an ambitious program are not clear.
- (4) A more ambitious program using different platforms is not reasonable in 1993, but we have to consider the possibility of such a new program before the end of this century: The question is, how can we think about an integrated new program using different tools?

(5) How are we to manage science between 1993-95? This situation is the concern of various committees. The French position will greatly depend on how the Europeans will face this future. The NEREIS concept has been passed to the ESF and discussed; we are at a stage of discussion, and a meeting in Strasbourg in July will see further discussion of this topic.

Biju-Duval gave his personal point of view, that in the future, active processes at the ocean bottom need attention; some problems require drilling, some do not.

T. Asai said that many international global-change earth-science programs are competing for funding in Japan. Some have been approved, some are awaiting approval; ODP renewal is one of the programs awaiting approval. However, ODP scientists in Japan are very active and productive, and so are highly appreciated. No specific actions have been taken so far on national level. Some science communities relevant to ODP are just beginning to discuss renewal in 1993.

K. Kobayashi commented on the task at hand for the scientific communities. They have a hard task because of competition from other international programs. The budget for extension will be considered in early 1992, so Kobayashi will have to work harder after this meeting to negotiate. He commented on the proposed new Japanese drilling vessel. The Japanese government has two independent organizations for supporting the sciences; one is the Monbusho (spelling?) and the other is the STA (Science and Technology Agency). STA is proposing construction of the new drillship. After construction, JAMSTEC will support the new drilling platform. Only money for a feasibility study has been approved so far. Negotiations seem to be progressing with the hope to start construction such that the ship will be in use by 1999. So, it will be available for cooperative work thereafter, but not for the next phase of ocean drilling.

H. Dürbaum requested some clarification regarding the international programs in competition with ODP. K. Kobayashi responded that they are multinational programs such as InterRIDGE and global change programs - specifically WOCE (World Ocean Circulation Experiment), IGBP, JGOFS (Global Ocean Flux Study).

Briden wanted to know the stated objective of STA in proposing this new drillship and what sort of things are they planning to do? In reply, Kobayashi handed out a memorandum prepared by STA (Appendix 1).

R. Riddihough stated that in the Canada-Australia Consortium, the problem of renewal has been discussed for the last 6 to 8 months, putting together a strategy for persuading the scientific community to support the program. Within the consortium there is no problem with Australia, who is quite happy to continue to contribute at the same level. But within Canada, there is the problem that the support is coming from two major sources, with the Geological Survey of Canada putting up most of the money. It would be unfortunate if the Survey decided that it had other priorities. The Survey has the same kinds of budget constraints Briden was talking about; by mid-1992 we must have a firm decision at high (ministry) level; Heinrich's proposed time table fits nicely. Some additional points:

- (1) A jump in contribution level would require extra justification.
- (2) Canada could not entertain a renewal for more than 5 yrs and even then, with 3-yr review before confirmation of the last two years' funding.
- (3) The biggest problem is community support - Canadian geology is mostly land geology. ODP must be joined to other current, large Canadian programs with which it otherwise competes, e.g. Lithoprobe program, Arctic programs, and an emerging continental drilling program.

Heinrichs summarized the presentation, saying that nothing has changed much since Amsterdam; timing seems to be about right with various slight modifications; everyone has to worry about competing programs and initiatives.

Expected Level of Program and Required Resources

D. Heinrichs used the LRP budget summary (Appendix 2) to project a modest (10%) increase in funding over the next 12 years with no major radical jump. The planning includes an upgrade in technology levels and continued use of existing capital facilities (*Resolution* and shore-based facilities). We expect to advance in some areas to improve logging, sampling, and interpretation, but we are not proposing to recapitalize the program, i.e. invest in major capital improvements (ships). Another issue is length of the extension; we have indicated that we will propose one significant extension of 8 to 10 years with a "sunset provision." Any successor program would grow out of ODP and would be a new program, not a mere continuation of ODP. Heinrichs could not see significant advances with less than a five-year extension. Regarding financing and international participation: the US would find it extremely difficult to survive alone. The ideal scenario would be inclusion of all international chartered science organizations; the minimum would be 4 international partners, but 5 or 6 would be more acceptable. US will seek to obtain roughly 50-50 support (US:international); 60-40 is acceptable but less international support than 40% would preclude extension. We have internal support for the program with firm numbers only to 1992; 1994 sees a step increment in technology (Appendix 3), when we will be requesting more funds.

Discussion

J. Baker commented that one part of the international activity towards renewal is trying to ensure that the accomplishments of scientific drilling are noted in the literature; we would like to see review articles for *Nature* and *Science* in early 1991 highlighting these accomplishments.

J. Briden suggested that Heinrichs may have minimized funding increases; as he interpreted the table, the actual increase is more like 20%. A hike like that would require taking requests to the highest level. He notes, however, that the step hike is identified as applied to technology. Presentation to higher authorities would be easier in those terms.

D. Heinrichs maintained that the increments of the LRP table amount to less than 10% increase. Some discussion and refinement will be necessary in future, but on a conceptual basis, this is the model that has been discussed since COSOD II, i.e., a modest increase based on technology. T. Pyle emphasized that these numbers are "guesstimates."

PREPARATION BY THE ADVISORY STRUCTURE (PCOM)

Scientific Recommendations to JOIDES

R. Moberly reminded EXCOM and the ODPC that the JOIDES advisory structure responds to a proposal-driven process, i.e. the response is to specific proposals for drilling. Through March 1990 we have continued to receive proposals for work in many oceans from many countries. A summary of the range in proposals, in relation to themes developed from COSOD and panel white papers, and abstracts of recent proposals, are included in the agenda briefing book. In general, there is a good set of proposals for almost all of the themes. Recommendations by panels include both old and new proposals. Science recommendations are moving along very well. It may be that we will have to focus

or solicit proposals on some themes. There are, however, two particular concerns that have occupied much of the PCOM's time: deep drilling and assistance in renewal.

Deep Drilling

Drilling deeper than 1.5 km is necessary for many of the highly ranked proposals, but there are major technological difficulties. Industry and member countries have made available much expertise; TEDCOM has looked at the problem of deep drilling and warned PCOM that this will be a problem. A Deep Drilling Working Group will meet in late September to estimate the scope of the problem. A preliminary report may be available when EXCOM meets again in October.

C. Dorman wanted to know which of the highly ranked programs require deep drilling. Moberly replied that most will not; these are based on existing proposals and that the present ranking of proposals reflects technical possibilities. Much of the future lithosphere and tectonics planning, however, will lead to deep drilling, *e.g.* volcanic margins and nonvolcanic margins around the North Atlantic and perhaps elsewhere. Very deep drilling in Cascadia or Barbados would need capabilities beyond present ones. But the ranking in the agenda book is more the near future; deep drilling will probably have post-1993 timing. If we had deep drilling capabilities now, there is no doubt that LITHP would want to drill the lower crust and upper mantle.

Assistance in the Renewal Process

The PCOM had a discussion by its international membership from the science point of view, along the same lines as today's EXCOM survey with respect to timing of the renewal process and problems. Some weak points were identified: *e.g.* better publicity. An ad hoc committee, chaired by J. Austin, was formed to help PCOM develop a strategy to aid renewal. It has met once. J. Austin is available to answer any particular questions or summarize some of the points of its first meeting.

J. Austin said that PCOM took this up partly as a response to criticisms by Coleman. They are considering a number of possible courses of action, but the strategy committee should report to PCOM before these are discussed at EXCOM; there would be an opportunity to discuss this with EXCOM this fall. Relative to publicity, the brochure to accompany the LRP is very appropriate, at least for US recipients. The committee seeks input from partners regarding the implementation of publicity strategies; the committee is interested in learning what has or could be done. Ad hoc committee workings can be discussed tomorrow, after the joint session.

Moberly added that there have been adverse comments other than the Coleman letter: for more drilling aimed at economic geology, more drilling at high latitudes, etc. Comments have come from many sources, but not many are accompanied by "I am on a powerful committee..." To most of the others you can say that we try to do what we can based on proposals received.

Concluding his report, Moberly stated that PCOM was told by France, with some support from other countries, that there should be a set of new technical advances, or planning for these advances, before approval of participation could be expected. It is critical that some new technology be added to the program even if it does cost money.

PREPARATION BY PROGRAM MANAGEMENT (JOI)

Identification of Technological Needs

The JOI office helped in the preparation of the briefing for the NSB as preparation for aiding member countries with similar presentations. T. Pyle announced the completion of the LRP, a brochure for the intelligent layman, and the assembly of a slick LRP folio for dissemination (copies were distributed at the meeting 21/6/90). In addition, the strategy committee has recommended inclusion in the folio of information on ODP interaction with global geoscience programs.

Support of New Technology

In preparation for program renewal and in response to recommendations from panels, target areas include: high-temperature tools, slimline tools, sampling and logging problems (see Appendix 4). JOI developed a proposal to get ODP going in this area based on existing continental drilling technology. The DCS is now at sea on its second trial, and could be one of the most important contributions of ODP.

Promotion of "dramatic" science objectives is important because these have a disproportionate effect on the science community.

Interaction with International Global Geoscience Initiatives (Appendix 5)

An important project has been the promotion of liaison groups to JOIDES:

Groups established: GSGP and FDSN.

Discussion complete: NSDP and Inter RIDGE.

Discussions begun: IGBP, JGOFS and ILP.

More effort needed: GPF (France), JAPEX (Japan), NEDRA (USSR), CCDP (Canada).

An ODP 'test hole' has been requested by FDSN, and sampling of ocean mantle at offsets by RIDGE.

Next Performance Evaluation and General Review of the Program

PEC nominations are due this meeting. J. Baker explained that JOI has a contractual agreement to review subcontractors' performance; there have been 2 such PEC reviews since the program's inception. Dürbaum requested more information about dates, stating that it is difficult to appoint PEC reviewers if the meeting times and work schedule are unknown. In response, J. Baker said that a preliminary report is needed by June of 1991, so most of the work will be done between Dec. 1990 and Feb. 1991.

COSOD III

Plans are very tentative and need to be firmed before further discussion.

Meetings Tailored to the Needs of International Partners

The JOI office will do whatever it can to assist. Heinrichs added that NSF could provide help from various levels; Bob Corell will assist in any way he can. Either JOI or *JOIDES Journal* can be consulted for upcoming ODP-related symposia. Announcements for such symposia should be sent to both the JOI and JOIDES offices.

Discussion

H. Dürbaum suggested that the European geothermal project could provide some information to ODP and offered to provide the necessary details. B. Biju-Duval mentioned a new project to combine deep drilling and deep soundings, possibly in the Afar region, is being considered. Connections with transects have been through M. Zoback, so far. Maronde suggested that both Karl Fuchs and Mark Zoback could provide input regarding regional stress programs.

486 NEAR TERM PLANNING

PROGRAM PLAN FOR FISCAL YEAR 1991

Scientific Drilling Objectives (PCOM)

R. Moberly addressed the Program Plan for Fiscal Year 1991 as determined by PCOM at its Annual Meeting (the plan is summarized in the EXCOM Agenda Book, p. 008-009) Because of lengthy trans-Pacific transits, PCOM made some adjustments to the FY91 Program Plan: A 2-week leg was inserted to drill and case to basement a reentry hole as a test site for the Federation of Digital Seismic Networks; the following engineering leg will attempt to clear junk from Hole 504B; next is a paleoceanographic investigation, the Eastern Equatorial Neogene Transect; the final leg scheduled will have lithospheric objectives, either deepening of Hole 504B or bare-rock East Pacific Rise drilling.

Dürbaum, referring to the test hole near Oahu, Hawaii, questioned the method by which seismic data would be brought to the surface. Moberly replied that ODP's responsibility is to drill the hole; instrumentation and data retrieval will be the responsibility of whoever proposes to emplace the instrumentation. Helsley added that there are 3 soon-to-be-abandoned cables near the site; other options are fibre-optic cable (expensive) or retrievable recording package. If the test-hole experiments are successful, future holes will undoubtedly be located far from islands. Biju-Duval commented on a cruise scheduled at 1991/1992 devoted to emplacement of a seismometer in an IPOD hole in the eastern Pacific with an accompanying ocean-bottom seismometer for comparison. The objectives of and relationships between the various downhole instrument liaison groups were then summarized by Moberly and Pyle. Dürbaum then suggested that a formal agreement regarding data distribution from such projects may be desirable.

Budget Committee Report (BCOM)

J. Briden (for B. Lewis) summarized the BCOM Report (Agenda Book p. 065). JOI overhead was less than expected and ODP experienced a decrease in insurance premiums, producing favorable conditions (extra funds) for improvements in technology. The difference in BCOM's \$39.75 million versus the 39.6 million reported by T. Pyle is an estimated \$150 K for a duplicate set of tools (turned down by NSF). The SOE (Special Operation Expenses, usually a minimum of 4%) is now at about 5.7%. Specific problems presented to the BCOM included: Recommendations to accelerate publications had been well implemented by TAMU, so they needed funds to print; concerns regarding transportation of core were addressed; DCS costs and demand from the science plan to have this system developed and tested as soon as possible. Most of the big priorities for the base budget put to BCOM by TAMU and Lamont were funded in the priority order set by them. The budget meets program demands for the upcoming year as a result of a number of favorable conditions which are unlikely to recur. The target of \$42 million for

the next fiscal year should be retained. Success in technology should result in yet more pressure on the budget committee.

Budgetary Resolution (JOI)

T. Pyle, reported on budgetary status, stated that JOI simply "lucked out." Budgetary targets (Appendices 6-8) were reached and JOI was able to make improvements in technology as well. The list of favorable budget conditions include: Day rate was lower than projected by about \$1 million; JOI overhead allocations changed resulting in \$400 K; and insurance rates were reduced. In general we are doing well in getting the "future-looking" projects funded.

Commenting on the development of high temperature tools, he stated that although cost estimates and feasibility studies were developed in discussions with SANDIA, in the near future a letter will go out to all members regarding requests for cooperative agreements for development of high temperature tool technology.

T. Pyle offered an update on the RFP for processing radiolarian samples (Appendix 9). Proposals have been received; a review board has been set up and a report is due at the end of this month. If approved, the project will go ahead in October of this year.

Resource Constraints, FY91 (NSF)

B. Malfait (NSF) identified the main argument for the science program and the LRP as a lack of money for technical development. There has been some interaction with JOI in changing the way indirect costs were allocated, resulting in a decrease in the dollars charged to the ODP contract at JOI, and that money is reprogrammable; however, other activities may see an increase in indirect costs. The fate of the 1991 budget is still very unclear; the 1992 budget level cannot be fixed now.

D. Heinrichs was asked to give some perspective on the long-range financing. He offered a summary of the NSF congressional budget request (Appendix 10), which is a restatement of Bush administration recommendations. Total ocean sciences division request is \$171 million for a 16% increase over FY90 (Appendix 11). The increase in base programs, including ODP, is about \$4.4 million, or about 5%. Largest percentage of funding for direct support to scientists is going to global-change programs with complementary support for related field programs. ODP has a proposed \$3 million increase (9.4%; Appendix 12). Focus within the ODP will be both meeting operational costs and continued technological development. Depending on how reductions are allocated by Graham-Rudman Act, these figures may or may not be realized.

Over the years 1991-93, the Ocean Sciences Division (and the Earth Sciences Directorate) proposes to put a very heavy emphasis on global change research to bring it up to roughly one-third of the total budget (Appendix 13). Heinrichs then identified the major components of the global geoscience programs; future increases in funding will go toward achieving some balance between the various components (Appendices 14 and 15). Major increases to OCE global geoscience will be in 1991-93, tapering to steady state (Appendix 16). A recently proposed \$80 million budget cut for NSF will impact the earth sciences; the effects are unknown, but Heinrichs predicted that NSF will probably get almost all of its global change funds. Reductions probably will be in 'unspecified cuts' over the remainder of the budget. J. Baker stated that the cut probably will be more than the \$80-100 million recommended by the House Appropriations Committee.

PROGRAM OBJECTIVES, SPRING 1990 TO SPRING 1994

General Direction of the Vessel (PCOM)

R. Moberly reviewed information presented in the Agenda Book (p. 073-077). He elaborated on panel rankings, sites and technical feasibility of ranked programs. Programs may rise or fall within future rankings depending on progress in technological improvements. Future drilling will be concentrated in the N. Pacific and then move to the N. Atlantic; there are very few highly ranked programs in other parts of the oceans. The PCOM said that the vessel will operate in two main areas in the four years that began April 1990, in the Atlantic north of the equator and in the Pacific. Their preferred scenario is that the ship will continue in the Pacific until October 1992 and then transit to the Atlantic. With the insertion of the pilot hole north of Oahu, this may be modified by a few weeks, but that is the general scheme. The remaining highly ranked work in the Pacific amounts to about 9 programs (see Agenda, p. 013), and PCOM will choose from these during the Fall 1990 meeting. At its November, 1991, meeting, PCOM will choose from the top 5 Atlantic programs of each panel for the initial tour through the Atlantic.

The advisory structure has completely shifted from the regional to the thematic mode, and thematic panels have been pushed through their main ranking duties. In the future, they will focus on particular themes, or write their own proposals to refine some of the programs.

RESOURCES NEEDED FOR NEAR-TERM OBJECTIVES (JOI)

For FY91, ODP shows a 4% increase over last year (Appendix 17). Concerns are: (1) high-temperature, slimline tools and backups (2 tools, water sampler and temperature logging); a considerable amount of potentially expensive development that may be required in the future. (2) DCS costs are difficult to predict. (3) Other engineering developments are needed, such as coring in sand, a pressure core barrel, sealing of holes, and many more. (4) Inflation of salaries, day rates for various services, and insurance rates are uncertain. Some flexibility is built into the budget. Looking ahead, we can do incremental improvements in technology at just about any budget level, but certainly not at the ambitious levels of COSOD or LRP.

Discussion

Helsley reminded EXCOM that the projection made by the budget committee several years ago, i.e. \$42 million for 1992, is still valid. We need to emphasize that the budget should grow at about 5-6% each year. Otherwise there will be a sharp increase at renewal time, which is just what we want to avoid. \$42 million will do, \$40 million will not. Dürbaum voiced his support of funding the program such that technological developments are possible.

ESTIMATION OF RESOURCES (NSF)

Funding Outlook, Remainder of FY89-92 Program

Heinrichs noted that he has not done a major reevaluation of projections for program funds. In terms of a formal letter to the program, the existing one stands; note that the international partners' contributions level increased in 1990 to \$2.75 million, the same for 1992. If NSF gets its requested funding level in 1991, ODP will be in good shape to consider a significant increase over the \$40 million level. He was cautious because of incomplete

budget information for 1991, but personally was optimistic. The NSF aim is for a budget with a target figure of \$41.5 million for 1992.

Participation of USSR

Eric Block, director of the NSF, submitted a letter in January to the State Department requesting formal reconsideration of their decision not to admit the USSR in 1987. That request is under review, and the process is taking longer than expected. Dr. Bromley (Science Advisor to the President) convened an external panel that presented both the pros and cons; this panel met recently, their final report will not be available until some time next week. A draft version seems favorable. There are some technology issues; the program must meet US export control laws. Clearly, the drillship has equipment aboard that will remain on the export control list; the ship would have to be operated in a manner such that there would not be any export of that technology. Heinrichs expects difficulties will be resolved later this summer. If the USSR joins in 1991-92, the resource base for ODP will increase proportionately. If all goes well, the Soviets will probably enter the planning structure by mid-1991.

Discussion

The USSR is building a drilling platform under the mines and geology program, but for an unknown purpose. Nikita Bulganov indicated that the highest priority of the Academy of Science was to participate in international global programs. The USSR had dollars to participate in January 1990, but it is unknown whether those funds are still in place.

C. Dorman summarized what he knew about the scheduling of the ship construction; they have signed off on subsystems, and a positioning system. They are in the final design stage and will have a ship some time in 1993. Rosendahl said that there has been some discussion of their joint venture with a commercial company.

R. Anderson asked for further comment on admission of the IOC or the PRC. Heinrichs stated that NSF has heard nothing since last year from Taiwan, and no follow-up from the Peoples' Republic of China. Baker stated that Kitazawa of the Intergovernmental Oceanographic Commission is preparing a proposal to ODP to put together a consortium of many smaller countries, but its status is unknown.

Moberly asked if the USSR or other members join, and none are dropped, will there be any change in the number and length of legs from the present 6 per year? Heinrichs felt the answer to that was no, but ODP should be open to staffing problems. Briden remarked that members must be prepared to be relaxed when it comes to 1 co-chief per year.

487 PRESENT STATUS AND RECENT PAST OF THE ODP

PROGRAM MANAGEMENT REPORT (JOI)

Personnel and Other Changes: No major changes in personnel.

Public Relations

JOI is coproducing a film about ODP to be seen on US cable channels (Appendix 18). It is based on footage taken with US funds on Leg 105; the coproducer is in California and plans to start next month and finish next summer. The film may be marketed internationally. Questions can be addressed to Lee Stevens at JOI.

State of the FY90 Budget to Date

Budget is in good shape; 1 logging tool was lost on Leg 131, and help from NSF was requested to pay the deductible.

ADVISORY STRUCTURE REPORT (PCOM)

Moberly touched on the main points: The high attrition rate in panel chairs could be due to high demands placed on them lately. CEPAC has been dissolved. The JOIDES Office transfers to University of Texas at Austin; J. Austin and A. Maxwell will be the new chairs of PCOM and EXCOM, respectively. Miscellaneous actions taken at the April 1990 PCOM meeting are summarized in the Agenda Book.

EXCOM talked about the isotope policy last year; SMP has met, formulated a policy, and recommended no solutions of unstable or enriched stable isotopes be allowed on board.

Moberly lauded the interest of engineers and petroleum geologists from industry who participate in the advisory process.

Discussion

J. Austin added that the US JOIDES representative will be Dr. Craig Fulthorpe.

J. Briden questioned the PCOM April Minutes regarding the Ad Hoc Subcommittee statement that an "endorsement of ODP" by EXCOM was needed. Austin and Moberly replied to this, stating that part of the role of the ad hoc committee was to lobby the EXCOM for more energetic support. Basically, PCOM seeks the endorsement of a body with a broader scope than PCOM.

SCIENCE OPERATOR REPORT (ODP-TAMU)

P. Rabinowitz announced that Lou Garrison is retiring; Tim Francis will replace him. P. Rabinowitz summarized science operations since the last EXCOM, Legs 128 through 131. Leg 132, Engineering II, is now underway. Engineering objectives include: (1) Evaluating the performance and efficiency of the Phase II DCS; (2) Deployment and tests of the new mini-hard-rock guide base; (3) deployment and tests of a modified reentry cone; (4) Evaluation of techniques and hardware for establishing and maintaining upper hole stability for DCS deployment; and (5) Evaluation of the HRB or reentry cone/API drill string tensioning system for possible use as a mini-riser. It is premature to report on these engineering developments, that could be presented at the next EXCOM meeting.

Discussion

Dürbaum asked if the problem regarding synthesis papers had been resolved. Rabinowitz answered that occasionally a volume is published with no synthesis because the time frame is unrealistic for some chief scientists (see p. 171 agenda).

Thursday, 21 June 1990

WIRELINE LOGGING SERVICES REPORT (ODO-LDGO)

Personnel, Principal Drilling Results

Personnel changes at Lamont were listed in the handout distributed by R. Anderson. Anderson then reported on the principal logging results from recent legs in the western Pacific. A logging tool was lost during Leg 131, possibly because of the Kuro-shio current. Tool insurance will be affected; the last tool loss was on Leg 121. Recently, the logging program has been more aggressive, e.g. centralizers are back on drillstring, involving more risk. Logging efforts will continue to be aggressive.

After highlighting the utility of the FMS, Anderson explained that funds have been requested for an ODP computer operator to process FMS data onboard (up to 12 hours per station); 'FMACS' software will be distributed with FMS data.

Statistics, Participation in the Program

Handout contains a categorized listing of data requests for the year; there has been a general growth in requests for logging data. Wireline is doing well with distribution of data within ODP and industry in foreign countries; the next phase of ocean drilling should see the establishment of a computer-data network with satellite data banks allowing access to logging data.

Status of Tool Developments and Testing

Tests of the new wireline double-straddle packer were not attempted on Leg 131 because of poor hole conditions; it is ready to be deployed on the NE Australia Leg. Looking to the future, the *Resolution* should have the capability for measurement while drilling (the electronics are built on top of core barrel, requiring a wet-connect); wireline is joining the 'CONOCO Consortium' to monitor progress of this technique; a report was attached to the handout.

In March, Schlumberger announced MAXIS, a multitasking analysis system; used for imaging of a wellbore in real time. See Merrill-Lynch report in handout. This system is to be installed on *Resolution*. Letters from oil companies regarding oil-company interest in ODP also are appended.

488 MEMBERSHIP REPORT

CANADA-AUSTRALIA CONSORTIUM

R. Riddihough presented the membership report for the Canada-Australia Consortium. He remarked on a strategy for decision on renewal, stating that, despite recent technical difficulties with financial transfers, both Canada and Australia are in very good positions to negotiate for renewal. Having the ship off Australia soon, off Canada next year, near Canada the following year, and perhaps off Canada's Atlantic margin thereafter, makes it easier to generate enthusiasm for renewal. It is also a good opportunity to raise the profile of ODP within a primarily continental-based geoscience community.

One concern is that Canada is required to do an environmental impact assessment of drilling in Canadian waters; this will cost \$30,000 to cover hiring of a contractor to prepare the all-inclusive report, which is distributed up to the ministerial level before clearance will be granted. That makes everyone aware of drilling, but it could result in a stoppage. Canada is the first country to have to do this (at this level), but we think it can be done; further, it will serve as a model should other countries have to obtain similar assessments. On Juan de Fuca Ridge, for example, we may have to monitor effects of drilling in a region with established biological communities. Drilling is planned for a sedimented valley, where the communities may be unique, different from those on hard rock. The question then becomes how different is this particular community of organisms, considering that it will be destroyed in part.

A seminar is scheduled to coincide with the *Resolution* port call in Townsville, Australia. In Victoria, after drilling next year, we are hoping to set up symposium on ocean drilling and global systems for September 1991 to coincide with ship's arrival in Victoria. We are also trying to arrange for a shipboard signing of the Canada-Australia MOU. In October 1991, Roye Rutland, science coordinator for the PACRIM global change conference (Bangkok) has arranged for symposium for this program. Canada is on track for renewal; renewal is always a challenge, but we think it can be done.

EUROPEAN SCIENCE FOUNDATION CONSORTIUM

L. Westgaard presented the report for the European Science Foundation Consortium for Ocean Drilling. Westgaard reviewed personnel changes that had been announced at the Amsterdam EXCOM meeting; ESCO is now chaired by Cita-Seroni (Italy), the Secretariat has moved to Strassbourg, while EMCO is now chaired by Ottosson (Sweden). EMCO meets only once per year, and at its recent meeting concluded that the organization of the ESF Consortium was satisfactory. There are some problems, e.g., countries that are late or don't pay; countries that don't show up for meetings. These problems are partly due to budgetary differences. NSF has been very understanding.

Regarding the scientific plan and budget proposals for coming financial years, we are happy to see no increase in fee; PCOM's plan to move ship into the Atlantic also makes it easier for us to negotiate for extension of MOU's. The time schedule for the renewal procedure for the ESF consortium fits nicely with NSF's, so there is no need for further discussion.

ESCO has been looking at statistics relating to European participation in ODP drilling cruises; they are happy to see that many young scientists are taking part.

M. Fratta reported on the International Conference, 'Geology of the Oceans,' co-sponsored by ESCO and the Societa Geologica Italiana, and held May 14-16 in Palermo, Italy. This was the third such conference of its kind; about 70 papers were presented, with about 200 scientists in attendance. Lou Garrison was an invited speaker.

FEDERAL REPUBLIC OF GERMANY

D. Maronde reported for the Federal Republic of Germany. With an increase of 5% and an inflation rate of 2.5%. 1990 shows an improving budget situation for ODP funding. Germany had a positive decision for the next five years with an annual increase of 5%, however, no one knows how much salaries will rise. The top ranking theme in FRG right now is reunification and it will influence the science situation. We are awaiting the political decision that DFG will operate in a unified Germany. In DDR there is no comparable ODP advisory or support structure, but the situation is changing very fast; there is some interest

from marine geoscientists. FRG's cooperation with partner countries will not change and is not influenced by the new situation.

The ODP Annual Colloquium was held 10-12 January in Bremen, hosting about 100 scientists and guests from European countries; Barry Harding presented a summary of technical improvements and achievements. In Bremen we had a discussion of the German LRP and received a positive vote. There is growing interest in scientific investigations in the Pacific, primarily based on research conducted aboard the *Sonne*. 1990 saw the approval of 31 ODP-related projects with a budget of 1.7 million US dollars. Beiersdorf has edited a special volume of *Geologische Rundschau* with highlights of German participation in DSDP. At the end of 1989, Karl Fuchs' group received permission to obtain one borehole televiwer.

ODP-related activities included the planning of a study on reconstruction of the *Sonne*; the decision to go ahead will require upwards of 10 million US dollars. Construction starts at the beginning of next year, with tests next fall. Dr. Bungenstock (spelling?) of BMFT is retiring on 1 August; he was a very reliable counterpart for us and very helpful. He extends best wishes and greetings to EXCOM. In October 1989, in Bonn, a meeting with the theme '40 years science in the FRG' included a presentation by Dr. E. Seibold on the development of the geosciences, with highlights of the ODP and KTB programs. This will help the future of ODP because many politicians attended. On 1 September 1989 the new DFG priority program "global and regional driving mechanisms of biogenic sedimentation" started: (1) reef evolution and time, and (2) Cretaceous sedimentation. The program has a budget of about 1.4 million dollars US. The official opening of the main hole in Windisch-Eschenbach will be on 8 September 1990 with a rigging party in relation to the following conference on continental superdeep drilling in Regensburg on 11 September. H. Dürbaum added that just before the start of the deep hole there will be in Beireuth during 4-7 September, a symposium on seismic reflection investigations of the crust (continental and margins). He then summarized the 31 proposals for ODP-related research this year; many proposed to work on paleoclimate, mass balancing and petrology.

FRANCE

B. Biju-Duval presented the member report for France. In the short term, the 1990 budget is not satisfactory; the level of funding for science support remained stable, but taking inflation into account, this funding actually decreased. The budget for 1991 is still in preparation; no trouble is anticipated regarding general support for sea operations, but science support will be a battle. There have been a few changes in the ODP organization. A new advisory committee (Jean Aubouin) has been formed to look into the future and see what kind of action is needed for helping the program; the committee consists of scientists active during the DSDP and IPOD phases of ocean drilling; this committee has met only once.

A number of ODP-related cruises are scheduled, including 3 MCS surveys in the Atlantic (2 were carried out in the Equatorial Atlantic in April-May) and 2 cruises for diving and reentry of IPOD holes (temperature measurements and seismometer emplacement). Biju-Duval then described several additional MCS and submersible cruises proposed for next year. A general earth sciences meeting will occur at the beginning of July, at the ministry level in Strassbourg. The InterRIDGE meeting just took place in Brest. The annual meeting of the Société Géologique de France will occur in Nice, at the end of 1990. Biju-Duval showed an artist's view of the *l'Atalante*, which will be launched in the Atlantic in October, 1990.

In the mid- to long term, France does not expect any big problems until 1993. We will have to organize the budget and meetings. By 1993 we will have had many meetings; we have to look at the post-1993 program within the framework of cooperation with other European organizations. The consensus is that there is high interest for ocean drilling in general; what is not completely clear is why the probability to continue this program is low at the moment.

JAPAN

K. Kobayashi presented the member report for Japan. His presentation included a summary of cruises for the northwest Pacific. EXCOM was shown examples of recordings from the downhole seismometer emplaced during Leg 128 about 700 mbsf in Hole 794D in the Sea of Japan, and since serviced by the *Tansei Maru*. The *Kaiko Maru* conducted electrical resistivity experiments at Hole 794E, Leg 129. Attempts to deploy the ONDO downhole temperature-measuring device during Leg 131 (Nankai Trough) were unsuccessful; Kobayashi thanked the PCOM Chairman for permission to deploy the ONDO device during the following leg. Results from the recently conducted (beginning of Leg 132) ONDO deployment were not available.

ODP-related activities included a national conference on the results of recent ODP Bonin-Mariana research that was attended by more than 80 scientists. Two domestic meetings were held in January and March 1990 regarding ODP results in the Indian Ocean (Oman Margin and Bengal Fan) with special attention to the paleoclimatic effects of Himalayan upheaval. Two special issues have been published on the Indian Ocean.

UNITED KINGDOM

J. Briden presented the membership report for the United Kingdom, beginning with the renewal-process timetable. The UK is in the process of assembling a brochure for inclusion with the LRP to be distributed to UK nationals. Secondly, The UK is setting up a national review to justify continuation. Third, at a meeting at the Royal Society next spring, we will be regarding justification of renewal based on scientific presentations. At this time next year, we may be able to report how the review has gone. If all has gone well, then we must go to NERC for "core" funding (continuation). Help from JOI (an NSB-type presentation) would only be requested in the event of having to request additional funds at high level. ODP funds for the science program are secure until 1994. During the recent grants round, the caliber of proposals and the level of competition were high.

ODP is becoming one key element amongst the marine geosciences program. A British element of the RIDGE has bid for substantial new funds; a new UK paleoclimate program will fit in well with European programs along the same lines.

The keel was laid for the fully ice-strengthened hull of the *James Clark Ross* to replace the *John Briscoe*, much more of a research ship than its predecessor; multibeam sonar is in the plan. The *Discovery* will be stretched by 20 m.

UK is frustrated with its poor record (overlooking GLORIA and some others) for technical innovation; a deep-tow side-scan sonar (TOBI) has had some successful trials in the past few months. UK has more ambitions to develop its technological capabilities, especially for seafloor laboratories, in collaboration with France. An MOU with IFREMER is to be signed soon, either 9 or 10 July.

Next spring the national ODP meeting will be at the ministry level. Next week we have a

seminar at the Royal Geographic Society on results from the recently completed circumnavigation of the globe by the *Charles Darwin*, 1986-89. The importance of this symposium is the general high level of awareness. J. Briden will retain membership in EXCOM; next year, the new chair of NERC, J. Knill (an engineering geologist) will take over as ODPC member.

UNITED STATES (NSF and JOI)

B. Malfait gave the first part of the US report. D. Heinrichs had presented budget details previously; in Fiscal Year 1990 the overall NSF budget went up a little over 18% (Appendix 19), but ocean sciences were up only about 1%, partially in response to the previous year, when Congress protected the budget. ODP budget was stable or slightly down (Appendices 20-22).

1991 requests were up 14%; geoscience requests are up 18%; ODP requests increased 9% (3 million). Budget highlights:

Operations:	21.5 (million dollars)
Unsolicited science:	5.4
USSAC:	4.0
NSF contributions:	1.0

Malfait then highlighted some of the international cooperative programs supported by NSF. The five field programs are: MCS on the *Ewing* for the New Jersey Shelf Program; Near-bottom Refraction at 9°N on *EPR*; MCS on West coast of Antarctica; Deep-Tow survey in the Vema transform area. Over the last year we have seen an increase in downhole programs and data analysis from logging data proposals. NSF is supporting participation in the Nautile reentry program, cooperative development of instrumentation for monitoring temperature in some of the drillholes in the Middle Valley program, and a shallow water drilling program in the Bahamas using a 'jack-up' platform.

Finally, an update on *Bernier* refitting (renamed the *Ewing*) - the ship is at sea now on its shake-down cruise; the *Knorr* and *Melville* are to be stretched; the University of Washington ship "*Thompson*" to replace the old *Thompson* will be operational by mid-1991. Division of Polar Programs has obtained a contract for a new 300-foot ice strengthened vessel to be ready by 1992, possibly with full multichannel capability. DOSAC has moved its operations to TAMU, and NSF is currently funding an engineer there, half-time. An index for DSDP volumes will be published through TAMU in hard copy and on CD-ROM. The possibility of USSR membership is being reconsidered.

T. Pyle presented the USSAC report. USSAC-funded research (Appendices 23 and 24) consists of a number of small projects, generally less than \$100 K. Currently funded USSAC workshops (Appendix 25) include such topics as the upper igneous crust, upwelling systems, paleogene paleoceanography, travel support for the global sedimentary geology program at the SEPM meeting, plus some addition workshops pending. These are listed in the *JOIDES Journal* as they are funded.

F. Spiess has submitted a proposal for a wireline reentry system. More than 350 CD-ROM data sets have been distributed. The advisory committee suggests more USSAC emphasis on education. Pyle then distributed copies of the Long Range Plan.

489 FUTURE MEETINGS

The next EXCOM meeting is scheduled for 2-4 October 1990. G. Boillot announced that the meeting will be held 2-3 October 1990 at the Laboratoire de Geodynamique Sous Marine, Observatoire Oceanologique de Villefranche. Brochures were distributed. The hotel accommodations will be in Nice. It may be possible to offer a field trip to study tectonism related to opening of the Mediterranean Sea, the day after the meeting, 4 October. As the JOI Board of Governors normally meets immediately after the meeting, this will have to be resolved, perhaps by an intra-meeting field trip, as has been the case in the past.

The Joint ODP Council-EXCOM Meeting can coincide with a port call of the *JOIDES Resolution*. That must be in June 1991 on the west coast (possibly San Diego) or in March in Hawaii. The dates are uncertain and will depend on ship-scheduling decisions made at next PCOM meeting. An invitation was accepted to meet at Scripps during a San Diego port call in late June, so EXCOM members can visit the ship during its port call. Notification of a firm date and venue will be sent by 1 September.

Heinrichs elaborated on timing problems in response to criticisms of the meeting schedule. Eventually, EXCOM may have to move its Fall meeting to November or December.

EXCOM Business Meeting
Thursday, 1:15 PM, June 21, 1990
Washington, D.C.

490 CALL TO ORDER AND APPROVAL OF MINUTES

Corrections to the minutes were given by Dürbaum and Westgaard.

EXCOM Motion

EXCOM approves the minutes for the 3-4 October 1989 Executive Committee Meeting. (Motion Biju-Duval, second Dürbaum)

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

491 ADOPTION OF AGENDA

Several items were added to the New Business section: (1) Possibility of EXCOM members joining the drillship for the short drilling leg off Oahu; (2) Disciplinary balance on the PCOM; and (3) Resolution citing publication schedule.

EXCOM Consensus

EXCOM adopted the agenda as listed and amended for the 21 June 1990 Executive Committee Meeting. (There was no vote.)

492 FUTURE OF OCEAN DRILLING

EXTENT OF ACTIVE EXCOM SUPPORT

C. Helsley introduced the topic, stating that several US members of PCOM raised questions as to continuation of the joint program. Moberly commented further that some PCOM members are chosen because of their interest in drilling and it wasn't certain to all members that there was an equal commitment from the corresponding heads of member institutions. Helsley said that the undertone, or attitude, implied by the language of the statement included in the Agenda Book (p. 172-174) needs to be removed or clarified before renewal.

R. Riddihough remarked that John Malpas also expressed concern and that he and Malpas have had a number of arguments about it. Many EXCOM members serve on several decision-making committees simultaneously and must set priorities as must any other senior manager. C.Helsley replied that although that is the reality, unfortunately, the community is reading that as a lack of support on the part of EXCOM.

J. Austin stressed that the statements on p. 172-174 should not be taken literally and do not require a formal endorsement. PCOM is seeking support for what it sees as an exciting program. M. Leinen explained that one point highlighted at PCOM was the substantial difference between ODP and similar organizations. The structure of this program has EXCOM at its top; other programs have interest-selected executive committees, whereas EXCOM has the heads of institutes. EXCOM is never called upon to evangelize. PCOM is very sensitive to the fact that EXCOM members are directors of institutes and agencies, and as PCOM looks upon the funding agencies in different countries, it wonders if they will

form an opinion that EXCOM members' support for ODP is somewhat diluted. Austin added that these statements are an admission of frustration by the PCOM, as custodians of the science side of the program, that there are limits to its influence. When PCOM receives a letter like the one from Coleman, it is clear PCOM is not 'reaching' some parts of the scientific community to which EXCOM might have more ready access. Merrell said that this serves notice to the institutions to start campaigning.

C. Helsley felt that PCOM has reacted very strongly to the Hsü and Coleman letters; PCOM is looking to EXCOM for support and it would be nice to have something in the minutes to that effect. Moberly then summarized his correspondence with both Hsü and Coleman. Baker has suggested one action item could be a letter from EXCOM stating current status of movements toward renewal.

Austin expressed one aspect of the frustration of PCOM, *i.e.*, some feel that ODP is not addressing the themes adequately, but there is no evidence that EXCOM sees things the same way. Many feel that ODP is too much like DSDP. One of the questions discussed is to bring a more detailed focus to the program, for example, to identify six themes and spend as much time as necessary on each. That, however, would require a further change for the advisory structure. J. Baker added that one reason for PCOM to set up the strategy committee was for that committee to identify the main concerns. Those should be brought to EXCOM and discussed at the October meeting. D. Heinrichs said that if we extend the program, that will allow us to extend the planning window; *i.e.* come back years later to do more thematic research. The research mode should evolve to address the LRP.

R. Moberly said that from this discussion, his understanding is that EXCOM would prefer that PCOM discuss the report of the ad hoc committee and if it seems appropriate, raise this issue again at EXCOM. He also asked if NSF would request the Ocean Studies Board to provide a formal review soon of the LRP, as had been urged. D. Heinrichs responded that the LRP will be sent to the Academy of Science, as part of a proposal for extension of the program, for review but the timing of a response is uncertain. Both the Ocean Studies Board and Board of Earth Sciences and Resources will participate in the review, but the structure is uncertain. NSF is not asking the Academy to provide the JOIDES function of reviewing the yearly or daily guidance of the program.

EXCOM Consensus

Let these minutes show that EXCOM discussed this issue, and endorses and supports renewal of the Ocean Drilling Program. For anything further, PCOM should make a concrete proposal to EXCOM.

493 NEAR-TERM PLANNING

ADOPTION OF FY91 PROGRAM PLAN, INCLUDING BUDGET

The 4-year plan and the PCOM motion modifying the plan are on p 020 of the Agenda Book.

Discussion

With regard to the motion for adoption, R. Riddihough voiced some concern that the way that the Oahu test hole appeared at TECP seemed a "put-up job" and there has been some resentment. The conscious effort by the program to broaden its efforts is clear now, but

wasn't at the time of the meeting. Moberly said that some abstained from voting because of the way the topic was introduced.

Dürbaum asked about problems with timing of testing the DCS. Moberly replied that modifications and upgrades that have been made to date are being tested on Leg 132. It will take time for further upgrading and modifications. It was TAMU's request that the next engineering leg not be close to the present one that will end in early August. This Program Plan is appropriate; i.e. scheduling of the next engineering test leg allows sufficient time for further development ashore of the DCS and high temperature tools.

EXCOM Motion

EXCOM accepts the FY91 Program Plan, including budget, with the accompanying PCOM motion modifying the FY91 Program Plan. (Motion Caldwell, second Nowell)

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

OTHER NEAR-TERM PLANNING

Pyle reminded EXCOM that JOI would be sending out a letter to partners requesting them to initiate any informal discussions regarding renewal immediately, because of time constraints.

Helsley thanked the Budget Committee.

494 OLD BUSINESS

PARTICIPATION BY LESSER-DEVELOPED COUNTRIES

J. Baker repeated that Dr. Kitazawa of the Intergovernmental Oceanographic Commission (IOC) asked for information regarding organization of a consortium and would put together a proposal from IOC, but it remains in his hands. Baker suspects that they do not appreciate the difficulty and expense involved and so the probability that we will receive a proposal is low.

NOMINATIONS FOR NEXT PERFORMANCE EVALUATION COMMITTEE (PEC)

In response to questions by Riddihough, J. Baker outlined the kind of person needed: one who knows a lot about the program, but is not now involved, or may never have been involved at all. For example, Chuck Drake, a past chair, had not been involved for more than 10 years prior to his involvement on PEC 2. Persons may be from academia or industry; there must be a mixture of US and non-US; and from any institution at all, JOI or non-JOI. No committee members and no proponents, in general, should sit on the committee. Needed are persons willing to spend the time and having a broad perspective; suggestions for chairman are welcome. Six or seven persons is an ideal number, but the size can be adjusted. The main charge to the committee is to determine that the science objectives are being met by the program administrators, so a person nominated need not be a high-level administrator.

C. Helsley instructed EXCOM to submit written nominations totaling 10-15 persons to Baker through Helsley. Names mentioned at the table were: F. Goerlich, K. Heier, J-P. Cadet, R. Schlich, C. Summerhayes, A. Laughton, C. Harrison, D. Rapp, G. Schumacher, M. Talwani, D. Hussong, D. Roberts, M. Keene.

ADOPTION OF TERMS OF REFERENCE AND MANDATES FOR LIAISONS

PCOM asked EXCOM to approve the motion on p. 21 of the Agenda Book.

Discussion

In response to questions from Caldwell about the motion, Moberly explained that each liaison group is a 4-person committee, 2 co-chairs and 2 members. As an international body, ODP cannot form liaisons with national bodies. JOI has taken the initiative and made the initial contacts; JOI identifies such a group, then PCOM decides if the liaison would be appropriate. If so, it names the JOIDES co-chair and member.

Dürbaum noted the letter from JOI to Dziejowski, requesting names sent to the PCOM chairman; if we approve this motion, the wording of future letters should be changed. Helsley agreed, stating that the letter was written before there was a policy or mandate, but the intention of the letter is that PCOM provides approval.

Rosendahl asked the reasons for the 4 abstentions from the PCOM vote on this motion. Moberly replied that some PCOM members and alternates at the Paris meeting were, or will be, connected to liaison groups and therefore could be viewed as having a special interest.

EXCOM Motion

EXCOM approves the proposed mandate and terms of reference for Liaison Groups as stated in the agenda book. (Motion Rosendahl, second Stoffa)

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

495 NEW BUSINESS**LOU GARRISON'S RETIREMENT****EXCOM Motion**

Be it resolved that EXCOM express its appreciation to Lou Garrison for his important contributions to the success of ODP. (Motion Biju-Duval, second Caldwell)

Approved by acclamation.

PUBLICATIONS SCHEDULE

J. Briden read a statement that expressed the consensus of EXCOM:

EXCOM notes with approval the successful efforts of all concerned in bringing the publication of Initial Reports and Scientific Results on to schedule.

PARTICIPATION IN THE 1-2-WEEK LEG OFF OAHU

Several EXCOM members have expressed interest in participating in the short leg off Oahu (first 1-2 weeks of March). P. Rabinowitz asked for a head count: Riddihough, Dürbaum, Schilling, Moss, Briden. These persons are to write to Rabinowitz as soon as possible, as

TAMU is now staffing that leg; each should be sure to state whether interested in 1 or 2 weeks. D. Heinrichs noted that there are 3 or so NSF berths.

DISCIPLINARY BALANCE OF PCOM

J. Austin brought to the attention of EXCOM what could be a problem for 1991. US representatives leaving PCOM in 1990 are Brass, Kastner and Langseth. There is some concern that PCOM will be weighted heavily towards geophysics and petrology, with potential gaps in expertise in the areas of ocean history and geochemistry.

OTHER NEW BUSINESS

BCOM Nominations

B. Lewis steps down from BCOM; for the Fall 1990 meeting, EXCOM will need the nomination of a US EXCOM member for BCOM.

Retirement of B. Biju-Duval

C. Helsley thanked B. Biju-Duval for serving on EXCOM and wished him well in his new pursuits. He expressed EXCOM's appreciation of B. Biju-Duval:

EXCOM recognizes its long-term member from France, Bernard Biju-Duval, for his contributions and steadfast devotion to the Ocean Drilling Program.

Fall 1991 EXCOM Meeting in Germany

Dürbaum suggested the dates 1-3 October 1991, probably in Bonn with some excursion in the Eifel area.

The meeting was adjourned at 2:55 PM.

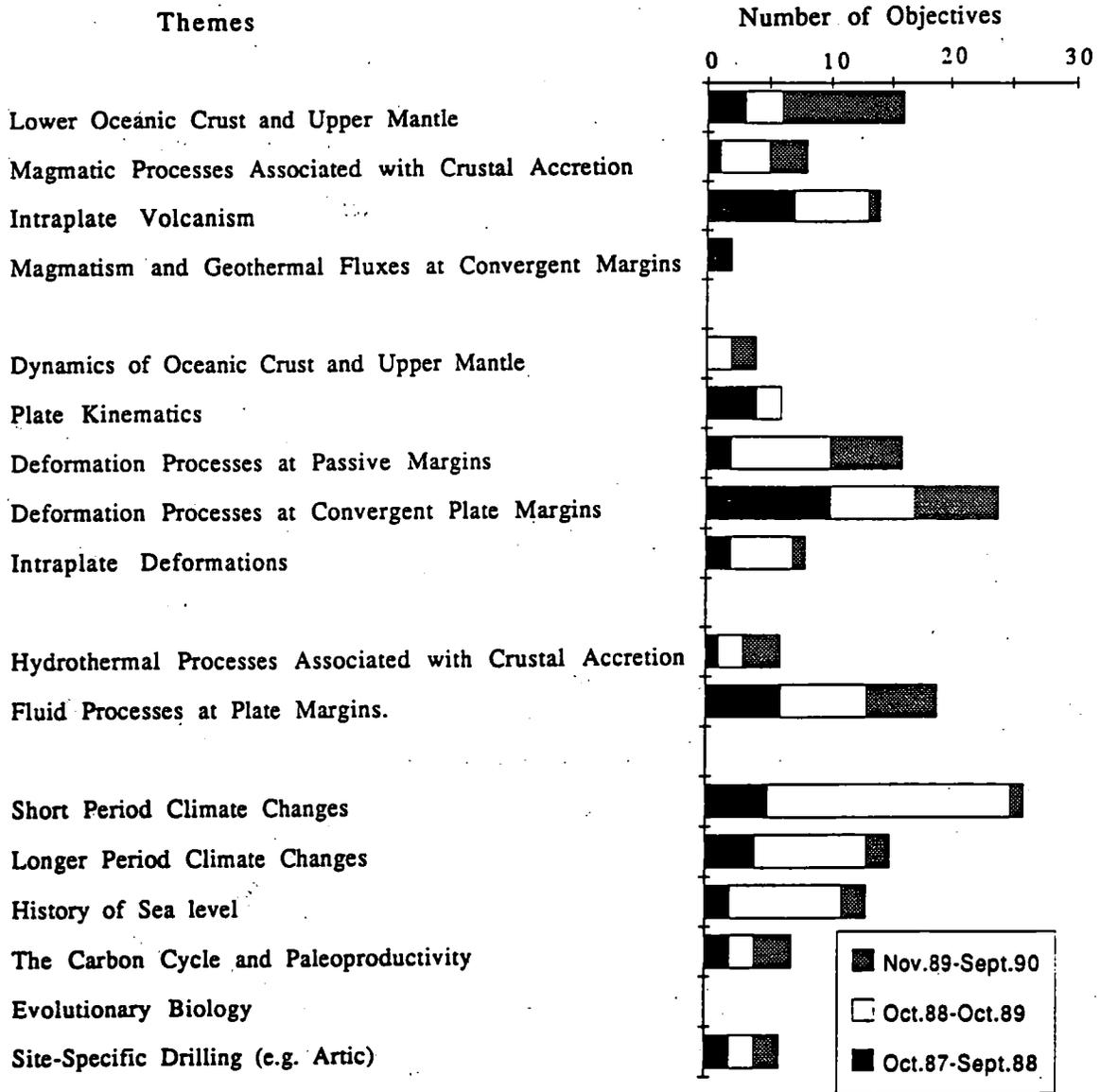
APPENDICES ATTACHED TO THE 20-21 JUNE 1990 EXCOM MINUTES

1. On an Investigation of Developing a Deep-Ocean Drilling Vessel in STA
2. LRP Budget Summary
3. Table 5-LRP
4. Preparation for Program Renewal
5. Coordination with Other Geoscience Programs
6. FY90-91 Budget Summary
7. Summary of FY91 Special Operating Expenses
8. FY91 Program Plan
9. RFP Processing Radiolarian Samples
10. NSF Congressional Budget Request
11. NSF Ocean Sciences Budget
12. OCE Long-Range Plans (1989-1995)
13. Global Geosciences Program Balance
14. NSF Program Balance
15. OCE Global Geoscience Projections
16. OCE Core Program Projections
17. JOI Projections
18. ODP Film
19. NSF Congressional Budget
20. FY 1990 NSF/ODP Funding
21. FY 1990 NSF/ODP Unsolicited Science Funding
22. Other Items
23. Site Survey Augmentation
24. Other JOI/USSSP Programs
25. Workshops

LIST OF HANDOUTS FROM THE 20-21 JUNE 1990 EXCOM MEETING

1. Wireline Logging Services Report
2. Long Range Plan

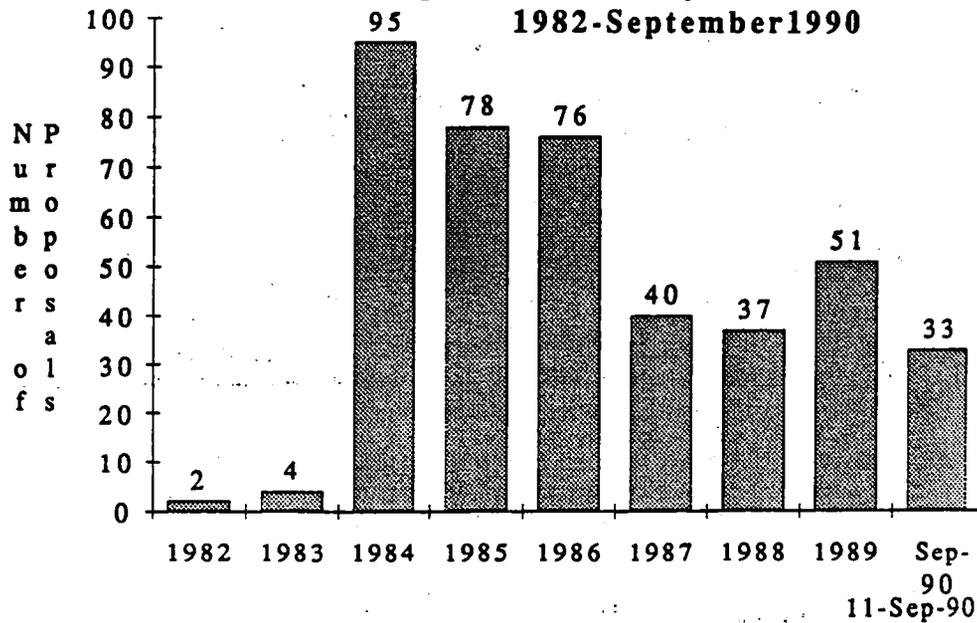
Objectives of Recent Proposals (October 1987 to September 1990) in Relation to Themes in the Long Range Plan



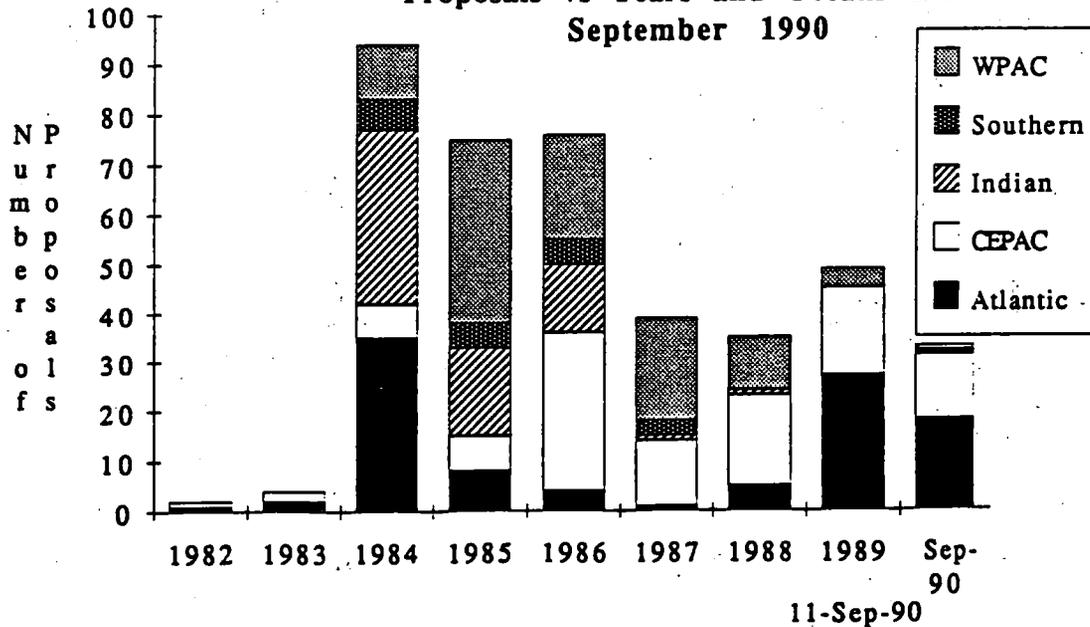
- 121 proposals have been considered.

- A proposal can address more than one objective. 11 September 1990

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



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



**ABSTRACTS OF THE ODP PROPOSALS
RECEIVED AT THE JOIDES OFFICE
(since June 1990)**

JOIDES Number: 233/E Rev/3

Date: 8/90

Title: Fluid Process and the Structural Evolution of the central Oregon Accretionary Complex.

Authors: J.C. Moore, L.D. Kulm, B. Carson, E. Suess, G. Moore, G.R. Cochrane, B.T.R. Lewis, M. Mackay

The central Oregon subduction zone is marked by conspicuous fluid venting and associated carbonate cementation, occurring in an environment of active upwelling and rapid clastic sedimentation over young, hot oceanic crust. Fluid flows through both stratigraphically- and fault-controlled conduits, constituting a dual permeability system. The fluid flow changes the sediment properties and therefore affects structural evolution which in turn modifies the geometry and types of fluid conduits. Changes in sediment properties are caused by fluid flowing from altering oceanic crust through the altering volcanoclastic sediments, transporting and redepositing significant quantities of calcium and other chemical constituents. The authors propose eight drill sites to examine fluid sources from shallow and deep levels to ascertain 1) how fluid flow affects the structural evolution and the hydrogeology and 2) how such fluid flow may affect the geochemical cycle. In order to investigate the range of possible conduits and alterations, drill sites are located in a seaward vergent structural regime (shallow to moderately sources), a landward vergent structural regime (deep sources), and upslope area of out-of-sequence thrusting (older? sources).

JOIDES Number: 355/E Rev/2

Date: 8/90

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

Authors: R. von Huene, E. Suess, K. Emeis, T. Shipley, K. Kvenvolden

Drilling through the base of a gas hydrate at a strong bottom simulating reflection (BSR) would further knowledge of hydrate formation and enhance the rationale on which to judge the safety of ODP continental margin drill sites. An area has been found on the Peru margin where the BSR may be penetrated safely. The area is in a synclinal axis where free gas and fluid migrate away from the structural low. A strong BSR on one flank weakens toward the synclinal axis allowing progressive drilling from an axial site adjacent to the BSR to drilling at sites where the BSR is stronger. Results from the first hole can be used to upgrade safety assessments for the net one by constraining the quantities of free gas and hydrate estimated at a proposed site from seismic data. The unique objective of penetrating the BSR is amplified by ocean history and tectonic objectives. The cores would test previous drilling

results indicating reduced anoxia during glacial relative to interglacial periods, contrary to glacial/interglacial relations observed at all other upwelling margins. Cores would also test a proposed tectonic relation between the coeval subduction of the Nazca Ridge and subsidence of the Lima forearc basin.

JOIDES Number: 385/E (Preliminary) Date: 8/90
 Title: Paleomagnetic, Sedimentary, and Stratigraphy Studies of an
 ODP Hole off Oahu
 Author: B. Keating

The author proposes that coring be a fundamental objective for the OSN hole to be drilled off Oahu. A combination of paleomagnetic reversal stratigraphy and stratigraphy of ash units should make possible to develop age constraints in these deposits in which dating and stratigraphy are controversial. Coring will make also possible to establish physical and acoustic properties for the OSN hole proposed by Purdy (proposal no: 377/F Rev.)

JOIDES Number: 386/E Rev. Date: 8/90
 Title: California Margin Drilling: Neogene Paleoceanography of
 the California Current, Coastal upwelling, and Deformation of
 the 'Gorda Plate'.
 Authors: M. Lyle, J. Barron, R. Jarrard, S. Halgedahl, J. Garner,
 R. Karlin, J. Kennett

This proposal is a revision and combination of proposals 271/E and 350/E. It is proposed to drill two transects, one near Cape Mendocino and near Cape Conception, and one site off Baja California in order to study the Neogene evolution of the California current. The paleoceanographic goals of the drilling program are:

- to determine the Neogene fluctuations in the strength of the California Current due to climatic change and how the variability has affected heat and salt transport in the Pacific Ocean.
- to determine how upwelling along coastal California has fluctuated through time and if the fluctuations are related to changes in the California Current strength.
- to determine how primary productivity has responded to Neogene climate change in the California Current and in the coastal upwelling areas.
- to determine calcite compensation depth changes in the northeast Pacific by means of the depths transects.

In addition, drilling of the set of transects needed to study the evolution of the California Current will provide important information about the tectonic evolution of the Pacific margin of North America. A supplemental objective will be to provide valuable information for understanding geomagnetic secular variation and the nature and timing of geomagnetic excursions smaller in scale than magnetic reversals.

JOIDES Number: 387/E Rev. Date: 9/90

Title: Deep Crustal Drilling in Fast-Spread Crust Exposed at the Hess Deep.

Authors: K. Gillis, P. Lonsdale, H.J.B. Dick, J. Natland

A series of offset, multiple re-entry drill holes are proposed for the Hess Deep rift valley in the western Pacific, where 1.2 Ma East Pacific Rise (EPR) crust has been exposed in the wake of a propagating rift. The exposure in the Hess Deep rift valley offers a unique opportunity to sample a representative section of normal ocean crust formed at the fast spreading EPR. In particular, exposure of lower crustal rocks along the walls and floor of the rift valley will allow for a complete crustal section to be sampled in a series of disconnected but spatially associated holes. Six sites are outlined which were located on the basis of *Nautila* and *Alvin* dive programs. The objectives of these sites include the Layer 2 - 3 transition, the upper and lower level plutonic sequence, and the transition into the shallow mantle. The overall goal is to characterize the igneous, metamorphic, and structural history of the recovered cores to develop a model for the evolution of oceanic crust formed at a fast-spreading ridge.

LISTING OF PROPOSALS

043

Revised: 9/10/90

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

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	Caribbean 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
64/A	Site NJ-6	Poag	US	6/84
67/D	Tonga-Lord Howe Rise transect	Falvey & al.	AUS	7/84

LISTING OF PROPOSALS

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JOIDES No	Title	Proponents	Country	Date
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	Shipley & 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	Matthias	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
122/A	Kane fracture zone	Karson	US	12/84
123/E	Studies at site 501/504	Mottl	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

LISTING OF PROPOSALS

045
Revised: 9/10/90

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

JOIDES No	Title	Proponents	Country	Date
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.-Gaussb. Ridge: hard rock	Frey & al.	US	7/85
151/D	Japan Sea: Mantle plume origin	Wakita	J	7/85
152/F	Borehole seismic experim., Thyrrhenian Sea	Avedik & al.	FR	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 junctio	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	Clocchiatti & 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
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

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JOIDES No	Title	Proponents	Country	Date
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 Arctic 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	UK	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
171/D	Bonin region: Intra-oceanic arc-trench dev.	B.Taylor	US	4/86
223/B	Central Indian Ocean fracture zone	Natland & 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 Abyssal Plain	U.von Rad & al.	G/AUS	5/86
129/C	Bounty trough	Davey	NZ	5/86
227/E	Aleutian Ridge, subsidence and fragment.	Vallier & al.	US	5/86

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JOIDES No	Title	Proponents	Country	Date
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	Eitrem & 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	Ujii	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
241/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	M.B. 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	Paull & 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
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 enviro.	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

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JOIDES No	Title	Proponents	Country	Date
272/F	Long-term downh. measurem.in seas a. Japan	Kinoshita	J	2/87
183/B	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.Mascle	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 Hydroth.	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	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.Shervais	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 Antarctic 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
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. Hsu & 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 paleoenviron.	N. Piasias & 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

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JOIDES No	Title	Proponents	Country	Date
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.	Paleoenviron. 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.	IG	7/89
331/A	"Zero-age" drilling: Aegir ridge	R.B. Whitmarsh & al.	UK/G/FR	7/89
332/A	Florida escarpment drilling transect	C.K. Paull & al.	US	7/89
333/A	Tectonic and magmatic evolution: Caribbean sea	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. Mascle & al.	FR	8/89

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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. Piasias & 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.	G	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
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
317/E Add/2	Seafloor bottom simulating reflectors: N. Cascadia	R.D. Hyndman	US	6/90
265/D Add.	Western Woodlark basin	S.D. Scott & al.	CAN/AUS/PNG	6/90
384/A Rev.	Venezuela basin and Aruba Gap.	A. Mauffret & al.	FR/US	7/90
385/E	Paleomag., sedi., strati.: ODP Oahu hole	B. Keating	US	8/90
385/E Add.	Paleomag., sedim., stratigr.: ODP Oahu hole	C.E. Helsley	USA	8/90
386/E Rev.	California margin drilling	M. Lyle & al.	US	8/90
233/E Rev/3	Central Oregon accretionary complex	J.C. Moore & al.	US	8/90
355/E Rev/2	Formation of a gas hydrate	R. von Huene & al.	G/US	8/90

LISTING OF PROPOSALS

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Revised: 9/10/90

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

JOIDES No	Title	Proponents	Country	Date
387/E Rev.	Deep crustal drilling: Hess Deep	K. Gillis & al.	US	9/90

JOIDES PLANNING COMMITTEE SUMMER MEETING
14-16 August
Scripps Institution of Oceanography
La Jolla, California

DRAFT MINUTES

Members:

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

Liaisons:

R. Anderson - Wireline Logging Services (ODP-LDGO)
T. Francis - Science Operator (ODP-TAMU)
B. Malfait - National Science Foundation
T. Pyle - Joint Oceanographic Institutions, Inc.

Guests and Observers:

K. Becker - University of Miami
T. Bralower - Florida International University
P. Blum - Future Executive Assistant and Non-US Liaison in JOIDES Office
A. Crawford - Australian ODP Secretariat, University of Tasmania, Australia
B. Harding - ODP-TAMU Engineering
M. Kastner - Scripps Institution of Oceanography
L. Kroenke - Hawaii Institute of Geophysics
A. Meyer - Science Operator (ODP-TAMU)
M. Purdy - Woods Hole Oceanographic Institution
M. Storms - ODP-TAMU Engineering

JOIDES Planning Office:

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

Tuesday, 14 August 1990

853 Introduction

PCOM Chairman Ralph Moberly called the 1990 Summer Meeting of the JOIDES Planning Committee to order. Jim Natland welcomed everyone to Scripps Institution of Oceanography. Natland explained logistics including a reception hosted by Scripps and a dinner hosted by JOI and the DRs. Winterer. Introductions were then made around the table. Moberly said that this was the last PCOM meeting for the University of Hawaii JOIDES Office, which will prepare and distribute the Draft Minutes, but the Revised Draft Minutes will be prepared by the UTIG JOIDES Office after 1 October 1990.

854 Minutes of 24-26 April 1990 Spring PCOM Meeting

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

PCOM Motion

PCOM approves the minutes of the 24-26 April 1990 Planning Committee meeting. (Motion Malpas, second Brass)

Vote: for 16; against 0; abstain 0

855 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 14-16 August 1990 Planning Committee meeting with amendments. (Motion Brass, second Austin)

Vote: for 16; against 0; abstain 0

856 ODP Reports By Liaisons to PCOM

NSF

B. Malfait reported that the House of Representatives has passed the requested increase of around 14% for the National Science Foundation but there was some shifting of funds between programs. The Senate had not acted on the budget before its summer recess. With the present budget deficit the Gramm-Rudman-Hollings Act would require a 32% cut across the board. This reduction is not the most likely scenario, since it would halt Federal Government operations, but requires Congress to act before 1 October. If there is no Gramm-Rudman-Hollings sequestering of funds. the ODP budget is projected to go up \$3M (3% increase). The Geosciences Directorate has a requested 18.1% increase with most of the increase going to the Global Change initiatives. The international-partner contribution level to ODP will be held constant at \$2.75M.

NSF ODP Field Programs that are upcoming are: near-bottom refraction of the EPR around 9°N by Purdy (WHOI) and Fryer (Hawaii) on the *Atlantis II*; MCS study of the Antarctic peninsula by Dalziel/Austin/Shiple (UTIG) and Hayes/Mutter (LDGO) scheduled for January/February 1991 on the *Ewing* in a joint project with UK scientists; Deep-tow study of the Kane Transform by Delaney (Washington) and Karson (Duke) scheduled for May 1991 on the *Melville* in a joint project with French scientists. New field programs include: a study of sediment properties and OBS experiments on the Cascadia Margin by Yamamoto (Miami) scheduled for Fall 1990 on the *Wecoma*; SEAMARC study of the Vema Transform by Kastens (LDGO), which is a joint study with France and is pending scheduling; and a multibeam, gravity, and dredging study of the Marquesas by Kruse (Eckerd), McNutt (MIT) and Natland (SIO) scheduled for Fall 1991 on the *Ewing*.

An Index to DSDP volumes is in the final stages of completion and will be published in hard copy with a computer searchable CD-ROM; the distribution will follow existing ODP guidelines. The possibility of Soviet participation is being examined by the US administration with activities to date including: rapid response to the December PCOM motion; initial interagency review of issues; intelligence agencies report; special panel for the science advisor; document on technology transfer concerns; and the final interagency review should be completed shortly. At the ODP Council meeting the following issues were discussed: strong support for Ocean Drilling; planning for renewal seems to be on track; uncertainty in facilities beyond 1998 is a concern.

Discussion

Austin said that a 10-year renewal was the aim announced at EXCOM; is this still the goal? Malfait said that the arguments for a 10-year renewal are there, but the questions about facilities will influence any decisions. Moberly asked how the actual funds for ODP relate to the target figures estimated by EXCOM several years ago to be necessary for technological advancement of the program. Malfait said that the budget is under those figures by approximately \$1M.

IOI

T. Pyle discussed the 1991 Program Plan, which has been approved by EXCOM and is under review by NSF. Highlights of the plan include: the SOE target of 4% has been exceeded; and an additional \$300K has been approved by NSF for high-temperature logging and sampling tools. Under current events: NSF has contributed \$50,526 for the insurance deductible for the logging tool lost on Leg 131; shipboard procedures have been under review in case the USSR becomes a new member of ODP; 2 Soviet scientists with continental and ocean drilling expertise have been invited to attend the Deep Drilling Working Group and TEDCOM meetings; the Long Range Plan will get general distribution in late August but PCOM members can get copies at this

meeting. During a visit to Japan, T. Pyle talked with ORI and JAMSTEC concerning various ODP issues (e.g. logging tools, new drill ship). JAMSTEC has expressed an interest in some involvement with ODP. The new drillship will probably be finished around 1998.

Liaisons with the Continental Scientific Drilling Programs (CSDP's) are being pursued, but this is a rather diffuse effort. A review of CSDP technology by Andrews and Pyle will be published in *Scientific Drilling*. Discussions with DOE have begun on common interests. Pyle will present an invited paper at the International Congress on CSDP, which is being held in Regensburg, FRG on 8-11 September. During his visit to Japan, Pyle talked to Japan Petroleum Exploration Company (JAPEx) about technology issues including logging. JAPEx is now interested in letting ODP use its high-temperature logging tools, but they have no water sampling tools and the cost to ODP is not settled.

Liaison efforts with IGBP (PAGES) is advancing. Pyle will attend the IGBP Science Advisory Committee Meeting in Paris on 4-6 September. There has been correspondence with Mosely-Thompson, an author of the US National Academy of Sciences Committee report on Global Change on Earth System History and Modelling, which discussed ODP efforts and problems with coring.

An invitation was sent in May to Zietzschel in Kiel, FRG, asking JGOFS to form a Liaison Group, but there has been no formal response because their Steering Committee will not meet until September.

The Nansen Arctic Drilling Program has nominations for a Liaison Group and waits for PCOM action. JOI is helping to prepare a brochure for NADP.

InterRIDGE had a meeting in Brest in June but no action was taken because the group did not feel empowered to form a Liaison Group.

Efforts to provide high-temperature logging and sampling tools is continuing. A letter was circulated to ODP member countries asking about available tools. There were 7 expressions of interest. Pyle's JAPEx visit also explored ways to obtain these tools. Further evaluation will have to be made with the advice of R. Anderson and P. Worthington about which tools will satisfy ODP requirements.

Miscellaneous other business includes: JOI/USSAC will support the Wireline Reentry development by Spiess (SIO) as a US facility; the Mac version of the DSDP CD-ROM is undergoing testing; there is a special issue of *Scientific Drilling* on ODP; and the ODP film is nearing completion (details in Appendix A).

Discussion

Duncan asked if there was a video camera onboard the *Resolution* for recording exciting moments when they occur. Harding said there is one available on the ship now. Brass said he thought that it would be a good idea to make recordings of all legs, which could later be used to produce visual summaries of the legs. von Rad asked how the ODP film would be distributed to member countries. Pyle said this had to be deferred until the film is completed and the number of copies is known.

Science Operator

Operations

T. Francis, the new Deputy Director, presented the first part of the Science Operators report. Francis and L. Garrison overlapped for part of June and July, which made for an orderly transition. Leg 131 at Nankai had severe operational problems. These included strong currents, which were not fully anticipated by the advisory system, and unstable hole conditions. Ways to avoid problems of bad hole conditions should be explored before similar environments are drilled in the future. The 2-3 knot currents caused strong vibrations in the drill pipe and problems with joints unscrewing, as well as problems with the cables and casing lowered from the vessel. Leg 132 will be discussed by M. Storms and J. Natland later in the meeting. Leg 133 had just gotten under way and had not started any drilling. Clearances from Australia were acquired the week before sailing.

The increases in fuel prices did not affect the *Resolution* at the port call in Guam because the price was contracted before the recent increases, but fuel will be a larger drain on the budget in the future and may cost an extra \$1M next year. The upturn in offshore drilling may also cause problems for staffing and drilling supplies in the future. SEDCO has said that the increase in the length of drilling legs from 56 days to 62 days causes problems for the drilling crews, who now must work 70 days on and 70 days off. If the crews worked on offshore platforms their work schedule would be 14 days on and 14 days off, making it easier on their families.

Discussion

Natland asked if the hold-up with the clearance from Australia was due to problems with environmentalists. Francis said that a special permit was required for drilling in the marine park. Crawford said that the problem was with the petroleum exploration companies, who felt that they should also be allowed to drill in these areas. It had to be made clear that this drilling is not for petroleum exploration.

Publications and Staffing

A. Meyer reported on the publications schedule and on staffing of legs. During FY90, 20 Proceedings volumes will be produced in an effort to catch-

up on the publications schedule (Appendix B). By the end of FY90 both parts A and B will have been published through Leg 116 and Part A volumes through Leg 128 (Appendix B) will be published. Legs have been staffed through Leg 135. Leg 136 will be staffed after the plans are finished by PCOM at this meeting. Eastern Equatorial Pacific Neogene has had invitations sent out, but Sedimented Ridges 1 has not yet but will after talking to the international partners at this meeting. Meyer presented a breakdown of US participants that had been requested by Tucholke and Moberly (Appendix B). The overall results have been about 50% of the participants come from JOI institutions and 50% from non-JOI institutions. The number of applicants for a leg are generally lower when legs are put into the schedule relatively late. Also the hard-rock legs that anticipate low recovery have fewer applicants. The number of participants has varied from the low 20s to high 20s, with the highest number on Leg 119 when the picket boat was alongside with extra berths. The Co-Chiefs have generally said that they would prefer to hold down the number of participants, except on high-resolution sampling, paleoceanography legs. Austin asked if non-performance increased with the total number of participants. Meyer said that it varies widely and is more dependent on how active a role the Co-Chiefs take in the post-cruise science.

G. Green, a Co-Chief on Leg 134, has approached T. Canby of the National Geographic Society about putting a photographer and writer aboard the *Resolution* on a short-term basis to highlight the drilling on the Vanuatu Leg. The article that comes out of this would integrate the scientific drilling aspects along with cultural and natural history of the region. National Geographic has expressed a willingness to pursue this article.

Discussion

von Rad expressed a concern that some delay in the publications schedule is the result of reviewers holding-up papers. Cowan said that ODP has been recruiting reviewers in advance of the paper's arrival from the author. Meyer said that the publications department is understaffed but tries to get reviewers lined-up before the papers come into the system.

Wireline Logging Services

R. Anderson presented the Wireline Logging Services report for the Lamont Borehole Research Group. He distributed a handout which presented some of the recent results of logging on Legs 130, 131, and 132. The Formation Micro Scanner (FMS) has been routinely deployed by ODP since Leg 128 in the Japan Sea. The FMS data is very useful for orienting cores and observing fine structures in the borehole. Anderson suggested that it should be an ODP policy to log all holes and not just those deeper than 400 m, since the FMS provides critical data up to the end of the drillpipe. Post-cruise processing of the gamma ray logs using spectral analysis can identify changes in sedimentation rates and reveal unconformities.

Logging on Leg 130 on the Ontong Java Plateau provided an almost complete set of high-quality logging data. Stylolites, pillow basalts and flows were beautifully imaged by the FMS. Major scientific results included logging of a wide range of sedimentological changes on a number of scales within what had been perceived in the cores as a monotonous column of ooze and chalks. Comparison of over 500 m of repeated interval between two wells only 50 m apart (807A and 807C) shows excellent replication.

Logging on Leg 131 at Nankai encountered many problems. Roughly half of the deep hole was logged through the pipe. The frontal thrust was logged and is easily identified on the logs. Similar hostile logging environments are expected during the Cascadia drilling and need to be addressed. The Lamont temperature tool was successfully run on the bottom of the tool string and provided multiple measurements showing the recovery of the hole temperature profile following drilling.

The modest logging plan on Leg 132 was unsuccessful. Four different attempts were made to lower the slimhole resistivity-caliper tool borrowed from Mark Zoback at Stanford into the 70 m hole drilled by the DCS. Only 7 m of open hole were accessed. Bridging and infill in such a narrow diameter hole make logging extremely difficult, even with a 1 and 11/16ths inch tool. Reaming appears to be the only alternative for logging high-temperature DCS holes.

Two wireline packers have been received from TAM International. During testing in the Lamont #2 test well, it was found that the deflation shunt needed to be enlarged to avoid clogging with hole debris. One modified packer was sent out on Leg 131 at Nankai. Two packers will be available on the NE Australia Leg.

Operational versions of LITHP's highest-priority slimhole logging tools (*i.e.* temperature, fluid resistivity, and fluid sampling) can be procured from either JAPEX or Sandia National Laboratories. The BRG will operate and maintain the tools on the *Resolution*. In FY1991 the electrical resistivity and possibly gamma-ray and sonic logging tools will be double dewered (assuming high-temperature crystals and transducers can be acquired). These slim-hole tools will then be evaluated in UNOCAL land wells to test both reliability and accuracy of measurements versus more conventional larger diameter tools.

The BHTV has, with the advent of the wireline heave compensator, acquired excellent data on hard sediment and basement. These data are important for providing delineation of formation contacts, fractures, and intraplate stress directions. The BRG is still negotiating the contract for the lease of these tools from the German WBK. The delay has been the BRG insistence on a paper shipboard copy of the BHTV logs. Leg 134 at Vanuatu will see the first-time deployment of three new logging tools; the CFA/ELF-developed Nuclear Magnetic Resonance Tool (NMT), the Susceptibility Tool (SUT) from Schlumberger, and the WBK Digital Borehole Televier.

In March, Schlumberger introduced their new digital shipboard acquisition and borehole imaging system, the Maxis X-Windows Multitask Acquisition System. The BRG has negotiated the deployment of this system on the *Resolution* at the port call in San Diego next summer.

There have been 13 Logging Schools so far, with one more scheduled for Townsville, Australia this October. The BRG is experimenting with videotaping the Logging Schools. There have been a number of ODP-related logging publications this past year.

Discussion

Langseth asked if there would be "real-time" FMS processing for the Vanuatu Leg. Anderson said that the results will be available relatively quickly but there is still a problem with having sufficient personnel. Duncan asked about the problems with logging on Leg 132. Brass said that the problem was initially caused by a piece of core blocking the bit inside, so the 4-inch pipe had to be pulled. There was also a bridging problem below the pipe.

857 Reports By PCOM Liaisons

EXCOM

Liaison R. Moberly reported on the meeting of the Executive Committee and ODP Council in Washington on 20-22. June. EXCOM and the ODPC discussed the perspective and scheduling for renewal, going country by country much as PCOM did in Paris. In summary little had changed since fall of 1989. Most timing seems about right, even though fiscal years and decision points may vary from country to country. Everyone has some worry about competing programs and global initiatives, but most are optimistic if there is not a major increase in required funds. Reports by JOI, BCOM, PCOM, Wireline Services, and the Science Operator were well received. EXCOM noted "with approval the successful efforts of all concerned in bringing the publication of Initial Reports and Scientific Results on to schedule".

Members of EXCOM and the ODPC were interested in visiting and/or participating in the short leg off Hawaii in late February as well as visiting the *JOIDES Resolution* in port in San Diego in late June; all of which requires a firm schedule well in advance of those times. The 1991 joint EXCOM-ODPC meeting is to coincide with the San Diego port call. PCOM and the Science Operator must set the dates of the Honolulu and San Diego port calls at this PCOM meeting so that EXCOM and ODPC can be informed by 1 September.

SMP

Liaison M. Leinen reported on the 20-21 March 1990 meeting of SMP, the minutes for which were included in the Agenda Book. The decision of SMP is that no radioactive or enriched-stable isotope reagents be allowed onboard the *Resolution*. After careful consideration, the panel could think of no essential experiments that could only be performed on the ship and

recommends the banning of these reagents. The provision for requesting exceptions was to allow some flexibility in case the need for an essential experiment does arise, but the panel was not able to foresee any need. PCOM agreed that the advice of the panel was sound and passed the following motion.

PCOM Motion

PCOM recommends that the use of radioactive or enriched-stable isotope reagents be banned from use onboard the *JOIDES Resolution*. (Motion Leinen, second Brass)

Vote: for 16; against 0; abstain 0

Discussion

von Rad said that he was still concerned that there were no facilities on the *Resolution* for X-ray radiography of whole cores, and this has not been addressed by SMP. Brass said that there was a X-ray machine for small samples but not whole rounds. Leinen said that the panel had not understood that there was a request for an endorsement of this capability. Natland said that he was concerned that the CHN analyzer that used to be on the *Resolution* has been replaced by a Carbon-Nitrogen-Sulfur analyzer, which means that there is no longer a capability to measure H and H₂O in igneous rocks. He suggested that SMP should canvass the community about the desirability of these measurements onboard the ship during the upcoming lithosphere legs at 504B, EPR, and Sedimented Ridges.

PPSP

Liaison R. Moberly reported on the 11-12 June 1990 meeting of PPSP in Reykjavik, Iceland. For Leg 135, Lau Basin-Tonga Arc, three sites were approved, one provisionally approved, and two disapproved; the latter three were to be reconsidered if additional information would be presented at a 9-10 August meeting at College Station. PPSP also discussed the need to include consideration of possible high-temperature hazards in some upcoming legs, and discussed again possible clathrate drilling and shipboard monitoring, the safety of drilling the Northeast Australian Margin, and the Exmouth Plateau post-mortem. With respect to the last topic, PPSP emphasized that all proposed drill sites of all legs will be considered on a case-by-case basis, and that the decision to allow the twinning of an industry site, with hydrocarbon shows, on the Exmouth Plateau, should in no way be construed as setting a direct precedent to be extrapolated to other drilling proposals.

Discussion

T. Crawford had a letter from P. Davies, Co-Chief of the NE Australia Leg, which was in reaction to a comment in the PPSP minutes about presentation of the safety package and concerns for safety at the deep drill site on the axis of the Queensland and Townsville Trough. It was pointed out that the

comment was made by only one member of the TAMU Safety Panel whereas the JOIDES panel as a whole had approved the drilling at these sites. The leg is fully endorsed by PPSP and PCOM.

Liaison J. Austin reported on the 9-10 August meeting of PPSP in College Station. The panel did a final review of sites for the Lau Basin that had been disapproved at the Reykjavik meeting. Sites LG-1, LG-2, LG-3 and LG-6 were provisionally approved with modifications in locations and the need to collect data as the ship approaches the sites. During the College Station meeting, PPSP was given an update on the PCS system. A draft of the Hydrocarbon Safety Manual was distributed. The safety and pollution aspects of deep crustal drilling were discussed; steam flash was judged not to be a likely problem. The need for H₂S safety abatement training for SEDCO and ODP personnel was recommended.

T. Francis presented a revised drilling plan that is based on the safety recommendations of PPSP, which require that LG-3 be surveyed by the *Resolution* for approval by the PPSP Chairman, PCOM Chairman, and Science Operator. PCOM considered the revisions which were in the spirit of the original plan of the Lau Working Group and takes the safety considerations into account, and produced the following consensus.

PCOM Consensus

The order for drilling sites on the Lau Basin Leg (135) will be modified so the order will now be LG-2, LG-7, survey LG-3 for PPSP approval, LG-10, LG-3, LG-6, LG-1, and LG-9.

The Science Operator said that in the 58 days for this leg, only sites through LG-6 will probably get drilled. The other sites will serve as alternates.

DMP

Liaison D. Cowan reported on the 28-29 June 1990 meeting of DMP held at the University of Washington. Cowan discussed DMP recommendations 90/10-90/15. There is a great concern about improving hole stability so that logging can be accomplished in accretionary prisms. The problem should be considered by TEDCOM. JAPEX should be approached about supplying high-temperature logging tools and logging cables (already discussed by T. Pyle). DMP has recommended a suite of logging measurements for the Oahu Pilot, Hole including a test of the borehole seal. A TECP liaison should be appointed to DMP, and liaisons from either the BRG or DMP should go to DPG meetings. Further discussion of some of the items was deferred until the appropriate place later in the agenda.

SSP

Liaison J. Watkins reported on the 12-13 June 1990 meeting of SSP at Lamont. SSP updated its assessment of Pacific programs and organized its future work for Atlantic programs. SSP discussed the potential problems with conflicts of

interest since many SSP members have been involved with the preparation of various drilling proposals. The panel felt that as long as the involvement was at "arms length" there should be no problems. SSP discussed and then suggested remedies for the planning process concerning weather- and current-related oceanographic problems at sites. Important specific comments were made about Chile Triple Junction, Cascadia Margins, North Pacific Transect, OSN Pilot Hole, Hess Deep, and Peru Gas Hydrates. The data package for the OSN Pilot Hole is not adequate and will require further SSP and PPSP review. The Hess Deep proposal was discussed and the panel recommended additional work including high-resolution near-bottom studies of rubble zones and additional MCS lines to elucidate structure. SSP does not think that the data will be ready for evaluation before 1992.

Discussion

Natland said that the dive video tapes of the outcrops in the Hess Deep can be used to pick drilling sites. Studies of the rocks are continuing and will allow good sites for the sections to be chosen. Meyer said that SSP did not view Hess Deep worth drilling without understanding the structure. Francheteau said that the MCS lines may not reveal the structure either. Natland agreed that due to topographic complexity the MCS will probably not reveal structure in the ultramafic and gabbroic rocks. Leinen said that the Hess Deep proponents need to respond to these criticisms.

Cascadia DPG

Liaison M. Langseth reported on the 9-11 August 1990 meeting of the Cascadia Detailed Planning Group in highly recommended Quinault, Washington. The DPG has recommended a plan that integrates primary objectives from both the Oregon and Vancouver proposals. The plan is to drill three shallow holes on the Vancouver margin to study variations in porosity and fluid flow in the accretionary prism. The flow at this site is calculated to be a broad diffuse flow ("sweating"), which leads to the formation of the BSR. Drilling is estimated to take 26 days including the suite of downhole measurements. For the Oregon margin, four holes are planned to study the observed more focussed flow through conduits ("peeing"). The first site will be through the primary frontal thrust to study flow from deep in the wedge through fractures. The second hole will be in the backthrust. The third hole will be at an out-of-sequence thrust where the BSR seems to be pulled up at the fault. The fourth hole will be at the landward vergent thrusts which form conduits for fluid flow. This will be a reentry site, cased to 300 m with perforated casing to guarantee success of the packer experiments. A very ambitious program of downhole measurements is planned which will include Geoprops, LAST, VSP, etc. The sealed cased hole will serve as an ocean bottom observatory. The total time estimate for the leg is 57.7 days including logging but not any transit times.

A second leg is planned to follow 2 years after the first leg. This leg will amplify what was done on the first by recovering instrument packages, re-instrument the holes with new experiments, and additional drilling. The second leg will drill a reference hole outboard of the wedge as well as drill the primary frontal thrust down-dip from the hole drilled on the first leg for tracer studies of the rates of flow.

Discussion

Malpas said that if the second leg is 2 years later, this will put it during the time the ship is in the Atlantic. Langseth said that the DPG felt that this was the most appropriate time for a follow-up leg. Taira asked why two holes were to be drilled in the primary thrust. Langseth said that in part this is to study quantitatively the effects of compaction on porosity. Calibration of the seismic velocity increase due to compaction will help to understand the overall picture revealed by the good seismic coverage.

Taira said that he thought the DPG should have focussed on one set of objectives rather than mixing the two sets of proposal together. He was concerned that the plan might be unrealistic about what can be done in the time available. Francheteau also questioned why the two proposals were combined. He thought that both margins deserve to have adequate time to answer the questions. Langseth said that the plan takes the best objectives from both margins so that a first approach is made towards understanding them. The plan proposed will answer some very fundamental questions about fluid flow in these margins.

von Rad suggested that SGPP and TECP should evaluate whether or not this is a reasonable drilling plan for these margins. Brass said that he thought these were two important regional studies to get started. The question about whether or not to study one in more detail should be answered by the thematic panels. Leinen said that the thematic panels should be asked if the compromise plan will lose any important thematic objectives.

Cowan asked how the focussed flow will be examined by drilling. Langseth said that the Geoprops probe, LAST tool, Wireline packer and Straddle packer can all be used to study pressures. Fluid samples can be studied geochemically to identify various processes and sources.

858 Reports By Joint Liaison Groups

FDSN

A. Dziewonski could not attend the PCOM meeting, so M. Purdy (JOIDES co-chairman) presented the plans for the Federation of Digital Seismic Networks (FDSN) as they relate to ODP. Three members of the Liaison Group met at the Spring AGU meeting in Baltimore and discussed technological issues concerning the Oahu pilot study, including the possible use of the Romanowicz downhole seismometer.

The long-term goal is the placement of 15 to 20 broad-band ocean floor seismographs in ODP boreholes in areas where no land or island broad-band observatory is nearby. The scientific goals of the program are to image the global earth structure better, and to constrain models of oceanic upper mantle dynamics and lithosphere evolution. The resolution of the present global tomography is limited by the seismic station coverage. A better spatial distribution is needed to sample the ray paths from large earthquakes. Oceanic islands are also not ideal stations because they are relatively noisy and have anomalous structure beneath them. Better coverage will also enhance source studies for earthquakes in areas such as California where there is inadequate coverage by ocean island stations.

Several technical issues remain to be worked out. The ability to operate a seismograph downhole for long periods of time has to be demonstrated. Data retrieval options have to be worked out. Possibilities include use of ocean-floor telephone cables, satellite telemetry, and interval recording. The pilot experiments are necessary to test the equipment and make a comparison between ocean-bottom observatories and nearby ocean-island observatories.

The Federation of Digital Seismic Networks at its annual meeting encouraged the efforts to form an Ocean Seismic Network using ODP boreholes by issuing a Statement of Support (Appendix C).

Discussion

Duncan asked about the timing and methods of deployment of the seismometer at the Oahu site. Purdy said that the seismometer will be deployed using the wireline reentry system sometime during the 1992-1993 time frame. No exotic experiments are planned at the time of the drilling of the borehole. Duncan asked what logging would be necessary for the pilot study. Purdy said standard logging and a VSP would be all that is required.

Austin said that the drilling in the Atlantic will provide opportunities to establish some OSN stations, and asked if the Liaison Group will advise on the best placement of holes. Purdy said the plans right now are to piggyback on other efforts when possible. Until the pilot study has been done, the practicality of the ocean floor observatories remains unknown, so it is hard to justify planning holes solely for this purpose. When opportunities arise to argue for leaving cased reentry holes or quickly drilling a hole in an area lacking coverage, this will be done. Brass asked if a list of prioritized locations would be produced, once the concept was proven. Purdy said that in coordination with FDSN the logic of what order to fill in gaps will be developed.

Taira asked about casing of the hole. Purdy said it has to be cased through the sediments to competent basement. Natland asked how deep the hole needed to be drilled. Purdy said that in order to study the propagation periods for long-period waves and noise levels to compare with the seismic station on

Oahu, experiments need to be carried out in sediments and basement at various depths.

GSGP

E. Kauffman could not attend the PCOM meeting, so T. Bralower (JOIDES co-chairman) discussed the Liaison Group with the Global Sedimentary Geology Program (GSGP). This liaison group has not yet met together, but plan to get together in late August in Denver at the Cretaceous Resources meeting. The GSGP is an activity of the International Union of Geological Sciences, which has the objectives of: understanding the history of the earth; finding and producing natural resources in sedimentary rocks; and training sedimentary geologists. The International Committee selected Cretaceous Rhythms, Events and Resources (CRER) as the first research project. The objectives of CRER are to: 1) test global synchronicity of various rhythms and events; 2) characterize and explain widely distributed sedimentary deposits; and 3) enhance further discovery and development of resources. There are 5 working groups in CRER: WG1 - Sequence stratigraphy and sealevel change; WG2 - Sedimentation in oxygen-deficient oceans; WG3 - Cyclostratigraphy; WG4 - Cretaceous carbonate platforms; and WG5 - Paleogeography, paleoclimatology, and sediment flux.

One activity for the Liaison Group will be to help strengthen drilling proposals with Cretaceous aspects such as: Atolls and Guyots; Shatsky Rise; NW Africa Transect; Equatorial Atlantic Margins; Argentine Basin; High Latitude Transects; and Somali Basin. There is a concern that there is not a good balance on OHP and SGPP between panel members with research interests in the Mesozoic and those with Neogene interests; this is discouraging proposals for drilling older sequences.

Discussion

Brass said that there also needs to be a stronger voice for the technological advances needed to recover more than 20% of older sections. Leinen said that a broader look than just recovering more samples needs to be taken. Models for the formation of black shales and oxygen-deficient oceans which can be tested by drilling need to be developed; drilling sites for doing these tests need to be identified and the proposals written. Bralower said that some of the proposed margin transects could address these types of problem if they get input from GSGP. Moberly said that carbonate platforms and some other areas which lack proposals could also benefit from GSGP input.

859 Engineering Developments

B. Harding discussed engineering developments at TAMU (Appendix D). The DCS test received most of the efforts over the past months. Harding commented on the following developments: Conical Side Entry Sub (CSES) has been completed and shipped to the vessel for Leg 133; Vibra-Percussive Corer (VPC) has been fabricated and shipped for testing on Leg 133; 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) is being reconfigured for use with the RCB coring system; this will include hard rock orientation capability with core scribes and a connection to a magnetic multishot camera, and will undergo further testing on Leg 134; APC Breakaway Piston Head (BPH) has been put on hold since development of the VPC may make it superfluous; Pressure Core Sampler (PCS) was modified for use on Leg 131 (Nankai) where it recovered 0.49 m of clay and clathrates near hydrostatic pressure; Drill-In-Casing System (DIC) was successfully used on Leg 131 and will be available again after minor modifications. The reentry cone seal is being developed as a joint project among E. Davis, K. Becker, B. Carson and ODP. ODP Engineering is developing the seal mechanism while Davis develops the data logger, Becker develops the sensor string, and Carson the fluid sampling feed-through. The mechanical seal should be ready for testing at the Oahu pilot hole.

Technical support of third-party developments continues to be a significant role of ODP engineering, these include: 1) Lateral Stress Tool (LAST) being developed by K. Moran; successfully tested using a modified APC at Nankai; 2) Geoprops Probe being developed by Dan Karig; will be tested at ODP in August and later this fall in New Jersey, but will not be deployed before Leg 134 (Vanuatu); 3) ONDO Thermistor String developed by ORI and ODP; deployed in Hole 808E but has not yet had its data recovered.

Discussion

Pyle asked who was in overall charge of the reentry cone seal project. Harding said that the fabrication of the mechanical seal was under the supervision of T. Pettigrew at ODP, and the seal is the part to be tested at the Oahu site. M. Cita asked how much time on Leg 134 will be needed to test the MDCB, SCM and Geoprops. Storms said that these will be tested during normal operations and will require only a few extra hours.

Leg 132

M. Storms discussed the results of the test of the Diamond Coring System (DCS) on Leg 132. The Engineering Leg accomplished a thorough evaluation of the DCS in the bare, fractured rock environment. The system was not evaluated in interbedded chinks and cherts or shallow water atoll and guyot carbonates. Test results for the overall system as well as subsystems are given in Appendix E. On the whole the DCS system has proven itself for deployment from the *Resolution* and shown the capability to drill and core in fractured rocks. The problems encountered with recovery in some units were the result of the friability of the material and the choice of the core catchers. The mini-hard rock guidebase design proved successful after minor modifications and the "pogo" concept worked very well. No major engineering changes are needed in the DCS at this time, just tweaking of some of the components. Two important unresolved questions for the EPR

drilling are bit life and rates of advancement in fractured basalts. There were no problems with hole instability and getting pipe stuck with the system used.

Discussion

M. Cita asked about the core catcher design used for the DCS. Storms said it was a standard off-the-shelf industrial design for hard rocks. Natland said that the core catcher was not the proper design to catch friable material and the problem may have been aggravated by the erosion caused by spray of fluid ahead of the bit.

Langseth asked if the system will be able to drill a 1 km hole in the basalts at the EPR. Storms said that this cannot be answered very well at this time. The platform mounted system is not efficient for deep drilling. The pipe feeding system takes time and to change a bit requires a round-trip of the pipe, which will take between 9 to 12 hours. The present range of the system is about 300-500 mbsf. For more efficient operations, the rigging crew needs to work on the rig floor. Harding said the present DCS configuration is robust enough to do the job. The next major expenditure for the system will be to get it on the rig floor with the tensioners. Brass said that the time for tripping the core barrel using the DCS is as efficient as the conventional system on the *Resolution*. Storms said that guides for estimating drilling times with the DCS are being prepared for the 4500 m configuration.

860 Next Engineering Development Leg

J. Natland and G. Brass in a letter distributed at the meeting suggested that the next test of the DCS be at Loihi Seamount immediately following the drilling of the Oahu Pilot Hole. This drilling would allow more experience to be gained with the system at shallower water depths before undertaking scientific drilling at the deeper EPR axis. The principal engineering objective would be to gain more experience coring in young basalts for better evaluation of bit life, core catchers, and wireline retrieval. The engineers said that the DCS will be ready for further testing by January 1991.

Discussion

Langseth said that at the Paris PCOM meeting, the next Engineering Leg for testing the DCS was deferred because the engineers said there would not be sufficient time to work on the DCS if the next test was in February 1991. Storms said that the prior time estimate was overly conservative since the DCS does not require as much work as anticipated.

Leinen commented that the drilling in the Bonins was supposed to be in young fractured rocks, based on what we thought we knew; how can we be sure that the drilling at Loihi will be the same as the EPR? The best way to evaluate the system for EPR drilling is to go there for the engineering test. Francheteau agreed that the EPR would be a better place for the next test of the DCS; if we say we are not going to go to the EPR until fully prepared, then it

will probably never get drilled. Storms said that an engineering leg at the EPR would be advisable before any drilling there, regardless of whether or not there is drilling at Loihi. Austin said that the test should be done where the science has been judged to be of high priority by LITHP, therefore the EPR makes the most sense. Natland said that Loihi was suggested because of its shallow depth, which means that more time can be spent evaluating the coring operations and less time tripping pipe. Watkins said that the drilling at the EPR should begin as soon as possible. Malpas agreed that it was important to begin this drilling as soon as possible.

Malpas said that addition of the Loihi drilling to the schedule will delay other programs, putting the Sedimented Ridges program in a bad weather window, as well as delay the appearance of the *Resolution* in the Atlantic. Moberly said that it is important for the renewal process that ODP show progress is being made towards the technically challenging drilling at ridge crests; a major engineering success is needed before renewal to show that ODP has made a significant advancement over DSDP.

PCOM Motion

The next test of the Diamond Coring System will take place on the next leg at the East Pacific Rise. (Motion Leinen, second Francheteau)

Vote: for 14; against 1; abstain 1

Wednesday, 15 August 1990

861 Adjustments to the FY91 Program Plan

Moberly expressed his concern that additions to the schedule are consuming time originally intended for science legs in the central and eastern Pacific since PCOM has indicated a time for the *Resolution* to go to the Atlantic. There are several requests for changes or additions to legs already in the schedule which PCOM took under consideration. Adjustments to the Lau Basin Leg were made earlier in the meeting (see Minute 857).

Location of Oahu Pilot Hole

M. Purdy discussed the changes in location suggested for the Oahu Pilot Hole to be drilled on Leg 136. The original site had been proposed for the arch to the northeast of Oahu, based solely on OSN requirements. Sites to the south of Oahu have also been proposed for scientific and logistic reasons. The scientific goals for a site on south of Oahu are the most compelling and fit the OSN requirements as well. Proposed sites in the moat are not tenable due to great sediment thickness (~1 km) and presence of avalanche debris deposits. OSN prefers that the sediment thickness be around 200-300 meters as on the arch. There is also deep velocity data on the arch which indicates normal crust and upper mantle. Logistic arguments for data telemetry and ship use are not compelling at this stage, since there are no plans to instrument the site permanently and the location of debris flows closer to Oahu is an

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unknown factor. The size of the equipment package to be deployed will require a large-size research vessel regardless of how close the site is to Oahu.

The proposals to move the site to the arch south of Oahu will bring a greater scientific benefit to ODP. The proposed scientific studies by Garcia, Wilkens, and Keating of windblown ash deposits from the Hawaiian volcanoes, paleomagnetism and physical properties are good science. The southern arch site is at the intersection of two MCS lines, has two-ship Expanding Spread Profiles and Sonobuoy data. The seismic control is very good and the structure is well known. Deep velocity data on the arch indicates normal crust and upper mantle at this location. The top of the basement is at 240 mbsf. In summary, the reasons for choosing this site are: proximity to the Global Seismic Network Station on Oahu; excellent support logistics; 200-300 m of sediments; auxiliary scientific studies; good velocity control, intersecting MCS lines; and the GLORIA data indicates it is clear of debris flows. OSN would be happy to go with the southern arch site.

Discussion

von Rad asked if there would be continuous coring of the sediments. Moberly said that this would depend on whether or not PCOM decides to accept the add-on and provides the extra time required.

Natland asked if the seamounts located near the proposed site would influence the OSN goals. Purdy said that the seismic data indicate that the crust and mantle are normal at this location.

Berggren said that from a paleomagnetic view-point, the southern site makes more sense for drilling.

Test of Borehole Seal at Oahu Pilot Hole

K. Becker discussed the proposed add-on to the Oahu leg for testing the mechanical seal for reentry cones. The ODP Reentry Cone Seal is an integral part of the scientific drilling programs for both Sedimented Ridges and EPR Bare-Rock legs. Becker presented sketches of the seal (Appendix F), which in addition to the mechanical seal will eventually contain a data logger, a sensor string, and a fluid sampling feed-through. It is essential that the mechanical packer and plug latching ring locks be tested in the new style reentry cones prior to deployment on the scientific legs. The test requires the *Resolution* both to place the seal and to remove it. The seal requires a 30,000 pound overpull to remove it from the cone, since the latches are designed for 10,000 psi overpressure in the borehole. The test cannot be done on land since it needs to be a hydrostatic test of the seal at ridge-axis depths. The test will require about 40 hours. The plug should not endanger either the hole or the cone since it can be pulled out. The sensors and data loggers can be tested on the

seafloor at a later time, but the seal requires testing in a reentry cone at ridge-axis depths.

Discussion

Purdy said that learning how to seal the hole is also of importance to OSN, since long-period noise is the result of water flow. Purdy asked why the seal is designed for removal only by the *Resolution* rather than by wireline or ROV? Becker said that the seal had to be designed to withstand an overpressure of 10,000 psi in the borehole estimated for Sedimented Ridges, but still capable of being pulled out by the *Resolution* if there is a failure of the packers or latch ring to release. The plug outlets for wireline or ROV access are for access to fluids and data, not removal of the seal.

Langseth asked what specifically would be tested. Becker said that the mechanics of installation and removal using the hardware plus the actual ability to seal the borehole. Langseth asked how the sealing of the borehole will be tested if there are no sensors installed. Brass suggested that the drill string be latched-in and the hole pressurized with the mud pumps to see if the cased hole holds pressure. Austin said that it is important to have a real test of the ability to seal the borehole; this may take additional time. Harding said that time for a pressure test is included in the 40 hour estimate.

Cowan said that the record of having equipment work the first time it is tried is not good, therefore it is essential to test the seal before the Sedimented Ridges leg. Francheteau agreed that the seal needs to be tested before the science legs, but thought land tests in addition to the sea trials would be appropriate.

Langseth asked if sufficient funds were available and Harding said they were for building the mechanical part of the seal. Leinen asked when the seal will be ready for testing and who was in charge of the project. Harding said that the design will be done at the end of the summer and then bids will be requested for fabrication. Harding said that since four persons were involved with different sources of funding, no one person was in charge. Langseth said that one main person should be in charge of the project. Harding said that Pettigrew is in charge of fabrication.

Time Requirements for Oahu Pilot Hole

PCOM reviewed the DMP recommendations for logging during the Oahu Pilot Hole Leg. These are BHTV, Sonic/Density and VSP (if sonic log poor). Anderson recommended a single logging run with the Quad Combo plus borehole imaging (either BHTV or FMS). Time requirements are about 36 hours for standard logging. The VSP will take another 36 hours. DMP put a higher priority on the Borehole Seal test than the VSP.

Time estimates for the leg were as follows:

8 days	Drilling and Casing
3 days	Sediment Coring
2 days	Logging of Open Hole
2 days	Borehole Seal Test
2 days	Transit to and from Honolulu

17 days total (would mean 3 days added to schedule)

Discussion

Moberly pointed out that the thematic panels have not had an opportunity to comment on the addition of the Oahu Pilot Hole to the schedule or on the desirability of coring here. These additions directly effect the amount of time that they have available for scientific drilling in the central and eastern Pacific. Malpas said that the addition of 3 days to the Oahu Leg will remove 3 days from the Engineering Leg at 504B as things now stand. More time may need to be added to the 504B Engineering Leg.

Leinen said that the proposed additions will make the Oahu Leg more of an ODP-type leg and produce some immediate science results for ODP plus earn some good will. There are strong argument for the coring, the Borehole Seal test and logging. Brass agreed that the three days should be added.

Purdy asked if the VSP is included in the time estimate. Langseth said that it was not. Austin reminded everyone that DMP endorsed the seal before the VSP, so this means that VSP drops off because of lack of time.

Time Requirements for Engineering Leg at 504B

At the Paris meeting, PCOM accepted the LITHP recommendations for logging, milling operations, and drilling ahead 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. The Science Operator requests that more time be allowed in order to improve the chances of success for coring ahead at 504B.

Francis reviewed the operations history at 504B. At the end of Leg 111, the bottom of the hole was 5036 m beneath the rig floor and the time for a round trip to change a bit was about 20 hours. Bit life was averaging about 20 hours and the penetration rate was around 2 m/hour. Average recovery had fallen

to 15% on Leg 111. Some of the material in the bottom of the hole include a diamond bit, as well as various parts including a steel flapper, a float valve and 42 steel ball-bearings, plus spall from the sides of the borehole. There are equivocal indications of possible problems with wear of the casing.

Francis presented flow-charts diagramming options and time estimates for proceeding at 504B (Appendix G). The most optimistic scenario would require 16 days of operations, and a realistic scenario is 22 days. The present schedule has 15 days of operations on-site at 504B. The Science Operator recommends that at least 3 weeks should be devoted to these operations to maximize the chances for success. The present estimate is that there is a 75% chance of success for getting the hole open by milling operations. If operations proceed smoothly and there is time to drill ahead, a test of tri-cone bits against narrow kerf diamond core bits is planned to see which gives the better penetration and recovery rates. If the casing is bad another short leg may be required. Options depend on the state of the casing, and range from patching (4 days), to setting a protective liner (3 days), to abandoning the hole (Appendix G). If the protective liner is set, then drilling would have to proceed with smaller diameter drilling systems. If the hole must be abandoned, plans have to be made for what to do with the remaining time. It is estimated that around 37 days would be needed to drill a new site without coring. A similar amount of time would be needed to clean and drill ahead at Sites 504A or 504D.

Discussion

Moberly said that this plan differs from what LITHP recommended. LITHP recommended drilling ahead only if time was available after milling. Francis said this plan is not significantly different, only if the extra time is available will the drilling experiments be done and these are important for evaluating how drilling should proceed. Moberly said that LITHP recommended that if it was not possible to clear 504B, then the full suite of logs should be run and the site abandoned. LITHP could not recommend drilling any other sites in this area.

Von Rad asked what was the most likely bit for drilling the 900 m to Layer 3. Harding answered the diamond-type bits. Langseth asked how the diamond bits would work with the present system. Harding said 60 feet of core will be cut and the whole drill string will be tripped since the wireline system will not work with this system. Langseth asked if this would slow down operations. Harding said that since the bit life is about 20 hours, the drill string would be tripped about this time anyway. Duncan asked what would be done if everything proceeds smoothly and only 16 days are required to prepare for further drilling. Francis said that the extra week will be devoted to coring ahead. Duncan said that this was the LITHP recommendation, so he sees no conflict.

Cita asked what would be done with the remaining time if the crustal drilling program at this site has to be abandoned entirely. Becker suggested that the program of sediment coring for OHP that was not fully accomplished on Leg 111 should be done. Austin suggested that the guidebases be set at the EPR. Brass suggested that the flow-charts diagramming options and time estimates for proceeding at 504B be examined by the thematic panels so they could give their priorities for proceeding along the branches. Moberly said the thematic panels will be asked what to do if time becomes available in this area.

JGOFS Experiments on Eastern Equatorial Pacific Neogene Leg

JOIDES has received a letter from M. Leinen acting on behalf of the Joint Global Ocean Flux Study (JGOFS) requesting that ODP collect a set of measurements and samples as an add-on program while the *Resolution* is on station drilling sites for the Eastern Equatorial Pacific Neogene Transect Leg. The measurements and samples include: meteorology and ship position; CTD; O₂; fluorometry, optics (at least PAR); collected samples for analysis of nutrients (NO₃, NO₂, PO₄, Si(OH)₄, and NH₄); POC/PON; and extracted chlorophyll and phaeopigments. The Science Operator has indicated that these measurements should be possible to collect on a non-interfering basis with the drilling operations. The samples will be collected, by hydrocasts, from the upper 200 m of the water column. The Co-Chiefs are willing to consider these experiments. These experiments will not require any additional time be added to the leg. Details about which technician to assign to handle the hydrocasts and samples need to be resolved.

Discussion

Francheteau asked why the drilling vessel was needed. Leinen said that the *Resolution* represents a ship-of-opportunity which will be in an area of interest to JGOFS as well as ODP. The advantage of the *Resolution* over other ships in the area is that it occupies one site over an extended time period. The spacing of sites is also appropriate for the JGOFS needs.

Moberly noted that JGOFS is one of the international programs with which ODP has been seeking to form links. It is appropriate for ODP to accept these experiments since they will not interfere with drilling operations and do not add time to the leg. Austin said that the cruise prospectus should state specifically that these experiments will be done on a non-interference basis and there may be days or sites when it is not possible to do them.

PCOM Consensus

PCOM recommends the accommodation of the JGOFS request for experiments on a non-interference basis on the Eastern Equatorial Pacific Neogene Transect Leg.

Additions to the FY91 Schedule

PCOM formally accepted the additions to the FY1991 schedule discussed above by passing the following motion.

PCOM Motion

Three days will be added to the operational days for the Oahu Pilot Hole Leg; Six days will be added to the operational days for the Engineering Leg at Site 504B; and whatever port time necessary to accomplish crew changes to accommodate these additions will also be added. (Motion Leinen, second Malpas)

Vote: for 16; against 0; abstain 0

862 Reports from Co-Chief Scientists of Recent Legs

Leg 130 Ontong Java Plateau

Co-Chief Scientist Loren Kroenke presented the results of Leg 130 on the Ontong Java Plateau. The primary objective of the leg was the Neogene depth transect to study paleoceanographic changes. A further objective was sampling of the basement of the plateau for petrological, geochemical and paleomagnetic studies. A total of 16 holes were drilled on the plateau, with a record 4822 m of core recovered. At Sites 803 and 807 a total of 149 m of Aptian to Albian aged basement was recovered. The most complete Neogene section was recovered at Site 806, elsewhere there were large hiatuses in the sections.

Cretaceous/Tertiary boundary sequences were recovered at two of the sites, a clay-rich facies with enough paleontological control for identification at Site 803, and a carbonate-rich facies at Site 807. These sites are in similar paleopositions with a difference in basement elevations of only 140 m. The difference in the K/T boundary facies is possibly related to a steep gradient in the CCD. The controls on sedimentation rates and carbonate contents seems to be paleoceanographic variables and not the time the plateau moved beneath the equator.

The basalts represent multiple submarine flows, with a hiatus at Site 807 between the deeper flows and the upper pillow basalts. Geochemically the basalts show a hotspot affinity, and are similar to basalts from Malaita and the Nauru Basin.

Leg 131 Nankai

Co-Chief Scientist Asahiko Taira presented the results of the drilling of the Nankai Accretionary Prism on Leg 131. Only one site (808) was occupied on this leg. The site was located in the middle of the Nankai Trough in an area where the turbidite section overlying the hemipelagic section was thinnest

and where high heat flow should produce higher rates of diagenesis. The drill site was situated to penetrate through the sediments to the frontal thrust, décollement and then to basement.

Drilling cored sands, frontal thrust breccia, highly deformed sediments, shear banded sediments, thrust faulted sediments, slickensided rocks in the décollement, undeformed hemipelagic sediments, and basement. The décollement zone was penetrated at about 900 m and was characterized by scaly clays about 19 m thick. There were no veins or mineralization found in the décollement zone. The sole of the décollement was characterized by 20 cm of clays below which there was no deformation. Just above the basement acidic tuffs and red clays were found. Core recovery was very good and will allow many studies to be carried out. Problems with hole conditions and vibration of the drill pipe caused by high currents, prevented the extensive program of downhole measurements from being carried out. No lithological differences were found in the hemipelagic sediments above and below the décollement. There are changes in the number of faults/m as well as physical properties at the décollement.

M. Kastner presented some of the results of geochemical studies of pore water squeezed from the sediments. Chlorine was found to increase in abundance to 500 m then to decrease until the décollement is reached where it again increased. Possible sources of the influx are local dehydration reactions of clay minerals or an influx from elsewhere in the wedge. Dehydration could only supply a maximum of 50% of the water needed. The rest comes from lateral fluid flow from some horizon elsewhere in the prism due to dewatering by deformation of the sediments. The flow is diffuse with no channeling evident.

Leg 132 Joint Engineering and Science Leg

Co-Chief Scientist Jim Natland described the scientific results of drilling in the Bonin backarc on Leg 132. The primary drilling site (809) was in an area of volcanic vents and flows in the initial rifting zone of the backarc where the recent volcanism laps onto older volcanic peaks. Initial drilling and coring in the fractured rocks had recovery rates around 60%, until the thin carapace of basalts overlying a second friable unit was penetrated. In the underlying unit there was no recovery, with the exception of a few small grains. This unit appears to be similar to the "basalt mousse" encountered on Leg 126. The few fragments recovered were of a highly vesicular basalt that had interconnected trains of vesicles with a geopetal-like structures where melt had inflowed to fill the bottom of the vesicle.

A second site on was briefly occupied on Shatsky Rise (Site 810). Initially the *Resolution* surveyed the area searching for thin sediments overlying the Maastrichtian age cherts. Eventually a site was found with 120 m of sediments over the cherts. The sediments were piston cored to the top of the

cherts prior to the attempted deployment of the DCS. The faunas found in these sediments indicate mixing of warm and cold water masses. In addition 15-16 ash layers were found in the Pliocene section. The surveys around Shatsky Rise indicate that the top of the seamount could have been at sealevel previously. Problems with equipment and the weather prevented further work at this location.

PCOM applauded Drs. Kroenke, Taira, and Natland for their efforts as Co-Chief Scientists, and thanked them for their presentations.

863 Facilitation of Renewal of ODP

Report of the *Ad hoc* Strategy Committee

J. Austin led the discussion about facilitation of renewal of ODP. He discussed the Minutes of the 29 May meeting in Washington. A salient point was the recommendation to PCOM that the following six themes become a focused approach to future ocean drilling:

- High-resolution Neogene Paleoceanography transects
- Sea-level studies
- Deep-drilling to understand the structure and fluid dynamics of accretionary prisms
- Passive-margin evolution
- Evolution of sedimented and un-sedimented ridge crests
- Offset drilling for deep lithosphere objectives.

The list had evolved from a comparison of the objectives of Phase 1 of the Long Range Plan with the highly ranked proposals from any ocean, with some committee adjustments in scope and wording. Presumably the supporters of the chosen programs, realizing the opportunities for more drilling for their proposed science, would provide enthusiasm for renewal that would more-than-offset loss of support from those proponents whose interests would be left out.

In light of the themes listed above (while stressing that they are a flexible framework into which modified or new themes could be incorporated), STRATCOM suggested that since some of the highest-ranked thematic objectives will require many legs, and even a renewed program will nevertheless have only a finite number of total legs, PCOM should select about 5 programs, announce a focus of drilling on those, and restructure its thematic and detailed planning accordingly. To do this PCOM would have to charge the thematic panels to go beyond existing proposals and DPG drilling plans to synthesize a prospectus involving a finite number of long-term focuses of ODP. The following questions need to be addressed:

- How will such programs be tackled effectively?
- Who will the proponents of these programs be?
- Do the proposals exist to tackle these programs effectively? If not, how will these proposals be generated?

The November 1990 Annual Meeting was proposed as a time to start this process, after a general discussion within PCOM in August.

The committee also proposed the inclusion in the Long Range Plan brochure of a series of one-page summaries of ODP's existing and newly formed relationships with important global initiatives in the earth sciences. These were to be on global change, technology development, global sedimentary processes, ridge-crest processes, high-latitude drilling, and continental drilling.

Other suggestions were:

- JOI was asked to include a presentation, similar to its one before the National Science Board in March, before EXCOM-ODPC in June.
- JOI was asked to consider augmenting the number of LRP/brochure packets to be published, to allow more mailings.
- NSF was to be asked to approach the Ocean Studies Board of NAS-NRC for a formal review of the LRP (D. Heinrichs was so asked at the EXCOM meeting).
- PCOM is asked to retain STRATCOM as an *ad hoc* executive subcommittee of PCOM

Discussion

Malfait said that NSF will approach the National Academy of Sciences about reviewing the Long Range Plan. Moberly said that the hope is that an early review will help in blunting any criticism that might come at a later time during the formal renewal process.

A long discussion was held on the proposed focussing of ODP. Counter arguments made at the meeting were that many proponents believe that diversity has been an asset of the program, bringing in many scientists outside the oceanographic institutions; the notion that some small group of scientists should decide what will and will not be allowed is contrary to a proposal-driven program where any proposed science, if it is good enough, has a chance for selection; too few of the "global initiatives" could expect ODP support; and confusing signals would be sent during the renewal period if having just produced and endorsed a Long Range Plan we now change its most fundamental aspects to a different plan.

The result of these discussions was that ODP will stick with the Long Range Plan. Nevertheless, great concern remains among most PCOM members that the objectives and phasing of the Plan may not succeed unless the advisory structure considers carefully how to carry it out. This motion followed:

PCOM Motion

In order to develop an implementation plan for the Long Range Plan, PCOM charges the thematic panels to:

- 1) Identify the appropriate way to integrate existing individual proposals into the larger thematic programs identified by their global prioritization and by the Long Range Plan;
- 2) Plan to obtain proposals for themes or theme elements that are not presently represented;
- 3) Integrate interdisciplinary interests into the program effectively; and
- 4) Determine whether it is necessary to identify coordinators or proponents for the theme program.

(Motion Leinen, second Brass)

Vote: for 13; against 0; abstain 3

Thematic panels should begin to answer this charge at their next meeting.

Because of its successes and its potential for further success relative to the exceptionally important matter of program renewal, PCOM asked the ad hoc strategic planning committee to continue its efforts.

PCOM Motion

STRATCOM will have another meeting to address the best ways to present the recent accomplishments and advances of ODP; and to illustrate the promise of the program over the next ten years, with the objective of enhancing the chances of renewal. (Motion Langseth, second Malpas)

Vote: for 16; against 0; abstain 0

Members of the *Ad Hoc* Strategy Committee are J. Austin (chairman), H. Beiersdorf, M. Leinen, J. Malpas, R. Moberly, and N. Piasias.

Addition of Innovative Science to Legs

The absence of regional panels and the restricted mandates given to detailed planning groups has caused some concern that worthwhile scientific objectives are being missed if those aspects of science are not included in the original proposal being reviewed by a thematic panel or sent to a DPG. Moreover, there may be instances where an objective can be met along the transit between sites or to or from ports. N. Shackleton has suggested that proposals for add-on science opportunities be considered to put more

innovation into drilling legs. Examples of "add-ons" of a couple of days to a couple of weeks might be deepening a paleoceanographic hole into basement in an area of abnormal crust; plugging an old re-entry cone en route to a scheduled site; adding a "tectonics" site to a "fluids" leg; or adding an experiment or testing a tool where not in the original scientific proposal. Most PCOM members believe that a mechanism for allowing some last-minute innovation is important for the future success of ODP, but there is a concern that "add-ons" are not being handled evenly.

PCOM asks the panels to help to inform the community that add-ons will be considered. Moreover, panel chairs at the Chairmen's Meeting should discuss the aspects of fairness, lateness, review, etc., and provide recommended guidelines for how PCOM should handle add-ons. Panels should discuss possible add-ons for the FY92 and remaining FY91 programs, so that their chairs will be able to make recommendations to PCOM at the Annual Meeting, after whatever guidelines are established. OHP and SGPP should note this specifically with regard to the proposed Santa Barbara Basin add-on.

Thursday, 16 August 1990

864 Miscellaneous Business

PCOM Watchdogs for Pacific and North Atlantic Proposals

PCOM decided that it was helpful to continue assigning watchdogs to proposals under consideration for drilling. Watchdogs should be prepared to lead discussions about the proposals and help when there are conflicting opinions from panels, but maintain a neutral position acting neither as an advocate or severe critic. The following is a list of watchdog assignments.

Pacific Ocean

B. Tucholke	Atolls and Guyots
Y. Lancelot (alt. J. Watkins)	Bering Sea History
D. Cowan	Cascadia Accretion
J. Austin	Chile Triple Junction
M. Leinen	Eastern Equatorial Pacific Neogene
J. Malpas	EPR Bare Rock Drilling
J. Malpas	Hawaii Flexure
R. Duncan	Hess Deep
J. Malpas	Lower Crust at 504B
K. Becker	Oahu Pilot Hole
Y. Lancelot (alt. J. Watkins)	North Pacific Neogene

A. Taira	Peru Gas Hydrates
M. Langseth	Sedimented Spreading Centers
H. Jenkyns	Shatsky Rise
R. Moberly	Young Hotspots: Loihi

North Atlantic Ocean

D. Cowan	Barbados Accretionary Wedge
J. Austin	Cayman Trough
J. Watkins	Equatorial Atlantic Transform Margins
J. Natland	MARK Area: Long Section of Upper Mantle
M. Cita	Mediterranean Gateways
B. Tucholke	New Jersey Margin Sealevel
U. von Rad	North Atlantic: Non-Volcanic Rifted Margins
R. Duncan	North Atlantic: Volcanic Rifted Margins
M. Leinen	Northernmost Atlantic Paleooceanography: Arctic Gateway
K. Becker	TAG Area High-Temperature Hydrothermalism
J. Natland	Vema FZ: Layer 2/3 Transition
J. Natland	Vema FZ: Layer 3-Mantle Transition
M. Leinen	West Florida Margin Sealevel

The JOIDES Office will send out copies of the proposals to the watchdogs.

Evaluation of ODP Drilling Results in terms of COSOD I Objectives

For their Fall 1988 meeting, EXCOM had been concerned with evaluating the performance and success of ODP in addressing the themes of COSOD I and therefore had asked the JOIDES Office to provide tables of which goals had and had not been achieved. PCOM later asked that these tables be revised with the input of the Co-Chief Scientists of the legs concerned. The JOIDES Office has received responses from 48% of the Co-Chiefs covering 72% of the Legs through Leg 128, concerning revisions of the tables. The tables have been revised based on these responses and were included in the Agenda Book. There has been a wide range in the degree of detail of the responses and some conflicts between Co-Chiefs in their interpretation of accomplishments. There was no response from Co-Chiefs from Legs 102, 109, 114, 116, 117, 120, 124 and 125.

PCOM remains concerned that the tables still may be incomplete or biased. PCOM asks each thematic panel to consider the COSOD I themes (at least the 12 principal themes) and prepare 1-page summaries of successes for those themes within its area of interest. In addition, the Panel chairs at the Panel Chairmen's Meeting will be asked about their panel's evaluation of the

success of ODP in addressing the COSOD I themes. Undoubtedly, at the time for renewal, agencies and review bodies will want to know what was accomplished out of what ODP set out to do.

865 Membership Actions for JOIDES Panels

PCOM emphasized its general concern about ensuring that the JOIDES advisory structure is open to participation by all US Institutions. PCOM has admonished all JOIDES panels to provide at least two nominees to cover each requested appointment and that these nominations should include "new blood"; the two or more nominees may be given in order of priority. 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. PCOM will avoid putting more than one person from a single institution on the same panel. PCOM members should also be prepared to nominate candidates to ensure that panels are balanced, regardless of whether or not nominations come from panels. A short description of the expertise of candidates for panel membership should be supplied for PCOM consideration when candidates are nominated. Thematic panels have been asked previously to supply lists of the expertise of existing panel members to be matched against panel mandates and also to indicate any perceived gaps.

In view of the need by the thematic panels for continuity and even distribution of the work load during the proposal review process, the Panel Chairmen will be asked at the Annual Panel Chairmen's Meeting about the best time to rotate panel members (i.e. should replacements be made prior to the fall meetings of the thematic panels as has been proposed by one panel chair, or at the beginning of the year as is done currently).

Membership on the various JOIDES panels was reviewed and the following actions were taken.

LITHP S. Humphris has accepted the chairmanship. Replacements for R. Batiza, L. Cathles, and M. Perfit need to be discussed and nominated by the panel at its fall meeting, for PCOM selection at the Annual Meeting.

OHP Because of heavy commitments this fall, J. Parrish declined the invitation to join OHP at this time but would like to serve in the near future. L. Pratt has accepted an appointment. Replacements for W. Berger and D. Kent need to be discussed and nominated by the panel at its fall meeting, for PCOM selection at the Annual Meeting. PCOM recommends replacements combining expertise in the Mesozoic be nominated.

SGPP Replacements for P. Froelich, M. Goldhaber, and W. Hay need to be discussed and nominated by the panel at its fall meeting, for PCOM selection at the Annual Meeting. No actions were taken by PCOM at this meeting on a

recent SGPP nomination because only one name was submitted and the appointment could be deferred until the Annual Meeting. It was reported that E. Suess will be stepping down as chairman after the Spring 1991 panel meeting and therefore nominations for a new chair should be made at the fall meeting. Canada-Australia reported that S. Macko has been replaced by R. Hiscott.

TECP Eldridge Moores has accepted the chairmanship of the panel after the Fall 1990 meeting when Ian Dalziel will be stepping down. I. Dalziel will serve on the panel through the Spring 1991 meeting. Replacements for R. Buck, D. Engebretson, and I. Dalziel need to be discussed and nominated by the panel at its fall meeting, for PCOM selection at the Annual Meeting.

DMP No personnel actions needed. During their joint meeting this fall, DMP and SMP should discuss the problem of liaisons between their panels.

IHP Both P. Fryer and W. Wise have accepted the Co-Chief positions on IHP. The Co-Chief positions will rotate frequently, depending on the rate of publication of the "Scientific Results" volumes.

PPSP No personnel actions requested. ESF has replaced E. Cassano with L. Deluchi.

SMP No changes in panel membership. The panel will continue to request guests to discuss issues. During their joint meeting this fall, DMP and SMP should discuss the issue of liaisons between their panels.

SSP J. Hedberg has not been able to attend any meetings of SSP and has resigned. Nominations for a new oil-industry representative will be sought by USSAC and, if time allows, the names may be circulated by correspondence within the panel before PCOM selection at the Annual Meeting. Because of maternity, A. Trehu was given a bye and will become a SSP member in the summer of 1991. G. Moore has accepted an appointment.

TEDCOM The addition to TEDCOM of someone with expertise in high-temperature drilling was approved by PCOM and nominations should be discussed by the panel at its fall meeting, for PCOM selection at the Annual Meeting. Chevron has replaced W. Cotten with P. Nicholls.

Annual Panel Chairmen's Meeting R. Kidd is to be asked to chair the Annual Panel Chairmen's Meeting at Kailua-Kona on 27 November 1990.
[Kidd has accepted]

Detailed Planning Groups and Working Groups A North Atlantic Rifted Margins Detailed Planning Group and a Deep Drilling Working Group were established at the Paris PCOM Meeting. PCOM needed to set membership and establish the mandates at this meeting. Plans for a one day meeting of the

Deep Drilling WG have been made for 26 September one day prior to the TEDCOM meeting. Various individuals have already been invited to attend the meeting, since preparations had to be made well in advance for some participants. It was the consensus of PCOM that a North Atlantic Arctic Gateway Detailed Planning Group would also be formed and staffed at this meeting. PCOM was also to consider the formation of a Sealevel Working Group. PCOM approved the formation of these groups, made appointments, and set mandates for all four groups, as indicated below.

Deep Drilling Working Group (DDWG)

C. Sparks, Chairman - designate for 26 September 1990 meeting

Core TEDCOM members for 26 September 1990 meeting:

C. Marx (FRG)

H. Rischmüller (KTB/FRG)

K. Millheim (AMOCO)

F. Schuh (Consultant)

Guests and Liaisons for 26 September 1990 meeting

B.N. Khakhaev (USSR)

G. Gamsakhurdia (USSR)

M. Finkel ? (Sweden)

A. Beswick (UK)

JAMSTEC ? (Japan)

J. Mutter (LITHP)

J. Alt (SGPP)

W. Dean (OHP)

D. Sawyers (TECP)

J. Austin (PCOM)

J. Natland (PCOM)

J. Malpas (PCOM)

T. Pyle (JOI)

R. Anderson (LDGO Borehole Res.)

K. Becker (PCOM)

T. Brittenham (Consultant)

S. Howard (ODP-TAMU)

G. Foss (ODP-TAMU)

R. Lawrence (DOSSEC/TAMU)

T. Francis (ODP-TAMU)

D. Reudelhuber (ODP-TAMU)

B. Harding (ODP-TAMU)

M. Storms (ODP-TAMU)

The mandate of the Deep Drilling Working Group is to prepare a document that identifies technologies that exist or need to be developed to achieve scientific drilling goals in those areas that require deep penetration (*i.e.* greater than 2 km beneath the seafloor). The working group will evaluate the alternatives they identify in terms of likely costs and suggest long-term strategies for achieving a deep drilling program in the oceanic crust and deep sedimentary sections.

In addition, PCOM sees the working group fulfilling a long-term function in advising ODP on deep scientific drilling, therefore, the group should examine

its mandate, suggest changes or additions in membership and nominate a chairman for this longer-term group.

North Atlantic Rifted Margin Detailed Planning Group (NARM-DPG)

H. C. Larsen (Greenland) - chairman designate

G. Boillot (France)

M. Coffin (UTIG)

O. Eldholm (Norway)

J. Hall (Canada/Australia)

K. Hinz (FRG)

D. Hutchinson (USGS-Woods Hole)

K. Miller (Rutgers)

A. Morton (UK)

D. Sawyer (Rice U.)

S.P. Srivastava (Canada/Australia)

B. Tucholke (WHOI)

R.B. Whitmarsh (UK)

The DPG is to examine the various proposals for drilling volcanic and non-volcanic North Atlantic rifted margins and recommend a prioritized plan for a drilling program, specifying the number of legs required to answer fundamental unanswered questions about these margins.

North Atlantic Arctic Gateway Detailed Planning Group (NAAG-DPG)

W. Ruddiman - chairman designate (LDGO)

W. Berggren (WHOI)

R. Heinrich (FRG)

E. Jansen (ESF)

L. Mayer (Canada-Australia)

P.J. Mudie (Canada-Australia)

J. Thiede (FRG)

T. Vorren - alternate chairman designate (Oregon State)

The DPG is to examine the three existing North Atlantic Arctic paleoceanographic gateway drilling proposals and provide a prioritized plan for a drilling program. If the highest priorities cannot be accomplished in one leg, the DPG should make suggestions for additional drilling.

Sealevel Working Group

P. Crevello - chairman designate (Marathon Oil, Littleton, CO)
 M. Aubry (France/WHOI)
 R. Carter (Canada-Australia)
 N. Christie-Blick (LDGO)
 P. Davies (Canada-Australia)
 A. Droxler (Rice Univ.)
 G. Eberli (ESF)
 R. Halley (USGS)
 T. Loutit - alternate chairman designate (EXXON)
 K. Miller (Rutgers)
 W. Sager (TAMU)
 M. Sarnthein (FRG)
 A. Watts (UK)
 E. Winterer (Scripps)
 The PCOM Liaison will be J. Watkins.

The Working Group is to formulate an approach for a worldwide attack on the problems of sealevel change utilizing the drilling capabilities of the *JOIDES Resolution*. A focussed drilling program should be formulated, specifying the number of legs required to answer fundamental questions about eustatic sealevel change and outlining the areas which will bring the greatest scientific return. A multi-disciplinary approach is recommended which incorporates lithospheric, ocean history, sedimentary, geochemical, and tectonic objectives.

In addition, the group should examine its membership and suggest changes or additions at its first meeting.

Liaisons from Service Panels to DPGs Both DMP and SSP have suggested that they be allowed to send liaisons to meetings of the Detailed Planning Groups to ensure that their concerns are known to the DPG. Having either a DMP liaison or Wireline Logging liaison will help provide realistic logging plans early in the planning process. Having either an SSP liaison or Data Bank liaison will help communicate the coverage of the site survey data base and any deficiencies. Earlier, PCOM had decided that having members from appropriate panels on the DPGs would eliminate the need for liaisons, but this has not occurred in all instances. PCOM agreed that the best way to handle these liaisons requests is on an *ad hoc* basis. If the service panels feel there is a need for a liaison to attend a particular meeting then the chairman of that service panel should make a request to the PCOM chairman.

Liaison Groups The following JOIDES panel members are to be invited to be members of the Joint Liaison Groups with other Global Geoscience Programs.

Liaison Group with the Nansen Arctic Drilling Program

Larry Mayer, Co-Chairman, (Dalhousie Univ.); member of NAAG-DPG

Bill Berggren, Member, (WHOI); member of OHP

PCOM Liaisons to Fall Panel Meetings The following is the list of PCOM Liaisons to upcoming panel meetings.

LITHP - Becker

OHP - Jenkyns

SGPP - von Rad

TECP - Taira

DMP - Cowan

IHP - Lancelot (alt. Cita)

PPSP - Moberly

SMP - Leinen

SSP - Watkins

TEDCOM - Natland

PCOM Motion

PCOM accepts the slate of persons nominated to serve on panels, detailed planning groups, and working groups and approves the mandates for these groups. (Motion Natland, second Malpas)

Vote: for 16; against 0; abstain 0

Co-Chief Scientist Nominations PCOM made recommendations for Co-Chief Scientists. For the Oahu Pilot Hole (Leg 136), A. Dziewonski and one of R. Wilkens, B. Keating or K. Becker were suggested. For the Joint Engineering and Science Leg at 504B (Leg 137), PCOM recommended for the science Co-Chief, K. Becker, R. Stephens, J. Alt, and R. Morin.

866 Future Meeting Schedule

The next meeting will be the 1990 Annual Meeting which will be hosted by the School of Ocean and Earth Science and Technology (SOEST) of the University of Hawaii at the Hotel King Kamehameha on the big island of Hawaii, on 28 November-1 December 1990; in Kailua-Kona, Hawaii. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 27 November. A field trip prior to the meeting is being planned for 26 and 27 November to study active and recent volcanism in the vicinity of Hilo and older volcanism along the way to Kailua-Kona. Panel chairs might attend the first of the two days of the field trip.

The 1991 Spring PCOM meeting will be hosted by the Graduate School of Oceanography of the University of Rhode Island on 23-25 April 1991, in Narragansett, Rhode Island. The meeting will be held on the Graduate School of Oceanography campus. A tentative field trip is being planned for after the meeting.

The 1991 Summer PCOM meeting will be hosted by the Bundesanstalt für Geowissenschaften und Rohstoffe on 20-22 August 1991, in Hannover, Federal Republic of Germany. There will be a two day field trip on Friday and Saturday after the meeting, to the Harz Mountains which will probably include stops in East Germany. The field trip will cover a large range of topics including sediments, tectonics, and volcanism.

The 1991 Annual Meeting will be hosted by the University of Texas Institute for Geophysics at the Thompson Conference Center on the Austin campus on 4-7 December 1991. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 3 December. There will possibly be a field trip, which might include examination of the Diamond Coring System and other drilling rigs.

The 1992 Spring PCOM meeting will be hosted by Oregon State University in Corvallis on 21-23 April 1992.

867 Conclusion of the Meeting

This was the last meeting for Garry Brass since he was stepping down from PCOM. In recognition of the many contributions of Garry Brass to ODP which have included: helping when PCOM became stuck in the morass; his extensive contributions to the science the program does; and generosity of his time and efforts; the following joint motion was made.

PCOM Motion

A PCOM geochemist named Brass
Talked always of cows eating grass
When LITHP asked for a few
Or even just two
He asked if they'd find any gas

LITHP answered 'What do you mean?'
It's majors and traces we're keen
So Brass voted 'NO!'
It can't be a go
For a hole without gas is obscene.

(Motion Leinen and Malpas, second Everyone Else)
Voted for by acclamation

The Planning Committee thanked Jim and Carole Natland for their efforts arranging the PCOM Meeting and other events. Jerry and Jacqueline Winterer were thanked for hosting the dinner at their home. Thanks were also forwarded to the Director, Dr. Edward Frieman and others at Scripps Institution of Oceanography for their hospitality.

The 1990 PCOM Summer Meeting adjourned at 1:30 PM.