Terms of Reference

JOIDES Executive Committee for the Ocean Drilling Program

1. This committee shall formulate scientific and policy recommendations with respect to the Ocean Drilling Program (ODP). It shall conduct the ODP planning, as well as evaluation and assessment of the Program as to its accomplishments as compared to the goals and objectives which have been established. It may be assigned managerial and operational responsibilities for appropriate tasks.

2. The members of this committee shall be representatives of oceanographic and marine research institutions or other organizations which have a major interest in the study of the sea floor and an adequate capability in terms of scientific human power and facilities to carry out such studies.

3. The membership of this committee is now composed of one representative of each of the six non-US countries or consortia with a Memorandum of Understanding (MOU) with the National Science Foundation (NSF): Australia-Canada-Korea Consortium, European Science Foundation, France, Germany, Japan, and the United Kingdom, and one representative of each of ten US institutions: University of Miami, University of Washington, Oregon State University, University of Hawaii, University of Rhode Island, University of Texas at Austin, University of California at San Diego, Texas A&M University, Woods Hole Oceanographic Institution and Columbia University. The appointment of additional members will be determined by the JOI Board of Governors on the recommendation of the JOIDES Executive Committee. In the case of representatives of non-US country participants, the existence of a valid MOU with NSF is a prerequisite to membership.

Membership of any member may be canceled by the Board of Governors on the recommendation of the JOIDES Executive Committee or in the event of a non-US country participant ceasing to have a valid MOU in existence.

4. Each institution or organization designated for participation on this Committee by the Board of Governors shall provide one voting member.
5. The Executive Committee shall reach all its decisions by the affirmative vote of at least two-thirds of all members, including members from at least three non-US members. A quorum shall constitute two-thirds of the Executive Committee. If a member of the Executive Committee is absent from a duly called meeting of the Executive Committee, he or she may designate an alternate with full authority to act for him or her in his or her absence.

6. The Executive Committee may establish subcommittees for cognizance of certain components of the Ocean Drilling Program. Areas of cognizance and the Terms of Reference for each subcommittee shall be defined by the Executive Committee. In particular a Science Committee and a Budget Committee shall be established.

7. The Committee, and all subcommittees thereto, shall keep written records of their proceedings.

8. Members of this Committee, and members of subcommittees duly appointed thereby, while acting within the Terms of Reference, shall be indemnified, and held harmless by the corporation from and against any and all liabilities, damages and demands, losses, costs and expenses arising from acts or omission related to performance as committee members.

9. These Terms of Reference, upon ratification by members of the existing JOIDES Executive Committee and adoption by JOI, Inc. will supersede all previous JOIDES agreements.

The Chair of EXCOM rotates with the JOIDES Office among the JOIDES institutions, excluding the Science Operator and Wireline Logging Service Operator institutions. The term of office is usually two years.

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**JOIDES Budget Committee for the Ocean Drilling Program**

1. **General Purpose.** The Budget Committee provides JOIDES overview and first review of the ODP Program Plan and budgets therein. The ODP Program Plan is compiled by JOI, Inc., the ODP prime contractor. This includes the annual Science Plan which is developed by SCICOM and prepared by the JOIDES Office on the basis of the drilling schedule determined by OPCOM and approved by SCICOM. Budgets in the Program Plan include those of the Science Operator and Wireline Logging Contractor. The Program Plan also includes a list of scientific and technological development needs, including estimated costs, which have been reviewed by the JOIDES Advisory Structure and which are required for successful completion of the Plan.

The ODP Program Plan (including budgets) is then submitted in draft form to the National Science Foundation (NSF). BCOM meets as occasion demands, according to a Program Plan and budget timetable, in order to provide continuing guidance in developing the final version of the budget in the Program Plan. The committee consults with JOI, Inc. and the subcontractors if budget questions or problems arise.

BCOM reports to EXCOM at its spring meeting (the joint EXCOM/ODP Council meeting). At that time, the full EXCOM approves the final ODP Program Plan and a detailed budget for the upcoming fiscal year.
2. **Mandate.** The Budget Committee is to review the ODP Program Plan and budgets therein and evaluate how well the Program Plan and budget address the priorities which have been defined by EXCOM and SCICOM. This review is to be reported to EXCOM and SCICOM.

BCOM also acts on behalf of EXCOM on budget matters that EXCOM delegates to it. BCOM can request that liaisons from the ODP subcontractors, JOI, or NSF attend its meetings.

3. **Meetings.** BCOM meets as required for developing the ODP Program Plan. Up to three meetings per fiscal year may be necessary to provide input on the ODP Program Plan and budget. Meetings may be required in the entire phase of developing the budget and Program Plan.

4. **Membership.** The Budget Committee consists of three EXCOM members and two SCICOM members, one of whom is the present SCICOM Chair. The second member is ideally the immediate past SCICOM Chair. A balance of three US and two non-US BCOM members is maintained. A quorum shall consist of two of the EXCOM members and one of the SCICOM members. BCOM members are appointed by EXCOM. EXCOM or SCICOM members representing JOIDES institutions with major ODP subcontracts will not be appointed.

*Ratified by EXCOM: 12 February, 1997; Adopted by JOI Board of Governors: 13 February, 1997*
JOIDES Executive Committee
Meeting Participants
January 19 -20, 1998,
BIOSPHERE 2, Arizona, USA

Executive Committee - EXCOM

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
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<td>Paul Stoffa</td>
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EXCOM Liaisons

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<tr>
<td>Nick Pisias</td>
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<td>Susan Humphris</td>
<td>SCICOM Chair, JOIDES Office, WHOI</td>
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<td>James Watkins</td>
<td>Joint Oceanographic Institutions, Inc.</td>
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Guests and Observers

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<tr>
<td>Pamela Baker-Masson</td>
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<td>John Farrell</td>
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<td>Hajimu Kinoshita</td>
<td>JAMSTEC (Japan)</td>
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<td>Shigeo Kuriki</td>
<td>Ministry of Education (Japan)</td>
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<tr>
<td>Hans Christian Larsen</td>
<td>Danish Lithosphere Centre, Copenhagen, Denmark</td>
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<tr>
<td>Bruce Malfait</td>
<td>US National Science Foundation</td>
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<tr>
<td>Dietrich Maronde</td>
<td>Deutsche Forschungsgemeinschaft, Bonn, Germany</td>
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### JOIDES Advisory Panels Meeting Schedule

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<thead>
<tr>
<th>Panel or Committee</th>
<th>Dates</th>
<th>Location</th>
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<tr>
<td>EXCOM</td>
<td>19-20 January 1998</td>
<td>Biosphere 2, Arizona</td>
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<td>SCIMP</td>
<td>15-18 February 1998</td>
<td>College Station, Texas</td>
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<tr>
<td>SSP</td>
<td>24-26 February 1998</td>
<td>Berlin, Germany</td>
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<tr>
<td>OPCOM</td>
<td>16-17 March 1998</td>
<td>Boulder, Colorado</td>
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<tr>
<td>SCICOM</td>
<td>18-20 March 1998</td>
<td>Boulder, Colorado</td>
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<td>EXCOM</td>
<td>23-24 June 1998</td>
<td>Germany</td>
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<td>ODP Council</td>
<td>25 June 1998</td>
<td>Germany</td>
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<tr>
<td>SCICOM</td>
<td>17-19 August 1998</td>
<td>Durham, UK</td>
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<tr>
<td>PANEL CHAIRS</td>
<td>20 August 1998</td>
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<tr>
<td>OPCOM</td>
<td>21-22 August 1998</td>
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Meeting of the JOIDES Executive Committee at BIOSPHERE 2 January 19 -20, 1998

JOIDES EXCOM Meeting Agenda

MONDAY January 19 8:30AM

1. Welcome & Introductions
   1.1 Introduction of EXCOM Members, Liaisons, Guests (Detrick)
   1.2 Meeting Logistics (Ellins/Mutter)
   1.3 Approval of Agenda (Detrick)

2. Minutes and Matters Arising
   2.1 Approval of June 1997 EXCOM Minutes (Detrick)

3. NSF/ODP Council Report
   3.1 NSF Management Report (Heinrichs)
   3.2 Membership and Phase III Renewal (Heinrichs)

4. Country Reports

5. FY 1999
   5.1 Science Plan for Legs 184 to 188 (Humphris)
   5.2 FY 1999 Preliminary Budget (Pisias)

Coffee Break ................................................................. 10:00 - 10:30AM

6. Addressing Phase III Funding Shortfalls
   6.1 Phase III Budget Projections. How Big is the Problem? (Pisias)
   6.2 Strategies/Options (Pisias)
       6.2.1 Recruiting New Members (Pisias)
       6.2.2 JOI Strategy for Implementing Partnerships with Industry (EXCOM Motion 97-2-8) and Other Types of Partnerships (Pisias)
           • Moore Initiative
   6.2.3 Cutting Costs within the Program
           • Possible Options (Pisias)
Lunch ........................................................................................................... 12:00 - 1:30PM

6.3 Discussion of Action Items Addressing Phase III Funding Shortfalls

7. SCICOM Report (Humphris)
   7.1 Implementation of the New Structure - Update on PPGs and OPCOM
   7.2 SCICOM Voting Procedures
   7.3 Dry-Dock Recommendations
   - Expansion of the Downhole Measurements Lab
   - Identification of Space for a Container for the Microbiology Lab
   7.4 Selected ODP Achievements for Legs 173 to 176.

BREAK FOR THE DAY & TOUR OF BIOSPHERE 2 3:00 PM

TUESDAY January 20 8:30 AM

8. Management and Operations Reports
   8.1 JOI (Pisias)
   8.1.1 The 1999-2000 JOIDES Office
   8.1.2 Status of the Search for the New Director of ODP and the New Assistant Director
   8.1.3 Update on the Implementation of Electronic Publications (EXCOM Motion 97-2-6)
   8.1.4 Update on Outsourcing of ODP Publications (EXCOM Motion 97-2-7)
   8.1.5 JANUS Status Report
   8.1.6 Public Affairs Subcommittee Update - Recommended Strategy for PR and Port Call Activities (Baker-Masson).

Coffee Break ................................................................................................. 10:00 - 10:30AM

8.2 ODP/TAMU Management Report (Fox)
   8.2.1 Update on the Day Rate of the JR
   8.2.2 Major Technology Development in ODP Phase III
   - Status of the Active Heave Compensation System
   - Status of Hammer Drilling System
   8.2.3 Update on Joint Ventures

8.3 Wireline Logging Service Report (Goldberg)
   8.4 Alternate Platforms

9. Planning for IODP
   9.1 International Working Group - Concept and Relationship to ODP/IODP
   9.1.1 Background on IWG (Purdy)
   - Terms Of Reference
   - Membership/Attendees
9.1.2 Summary of IWG Discussions (Purdy)
9.1.3 IWG Letter to EXCOM (Purdy)

**Lunch** ................................................................. 12:00 - 1:30PM

9.2 Status of Planning for IODP Riser Drillship (Maruyama)
9.2.1 Report and Recommendations of the CONCORD Meeting (Larsen)
9.2.2 Status of OD-21 Vessel - Funding and Timetable (Maruyama)
9.2.3 JAMSTEC Technology Development Project (Kinoshita)

**Coffee/Tea Break** ............................................................. 3:00 - 3:30 PM

9.3 EXCOM Response to IWG Letter
9.3.1 Timeline for IODP Scientific Planning (Pisias)
   • Conference to Define Science for Non-Riser Drilling
   • COSID III
9.3.2 RFP for Design Second Ship/Platform for IODP (Pisias)
9.3.3 Mechanisms for Providing Shorter-Term Scientific/Technical Advice, and
   Financial Planning for IODP (Humphris)

10. **Future Meetings and Other Business**
10.1 Bonn, Germany (June 23-24, 1998)
10.2 US (Feb. 1999)
10.3 Other Business

**Meeting Adjourned**
JOIDES EXCOM Meeting Notes
January 19-20, 1998

MONDAY January 19 8:30 AM

1. Welcome & Introductions
   1.1 Introduction of EXCOM Members, Liaisons, Guests (Detrick)
   1.2 Meeting Logistics (Ellins/Mutter)
   1.3 Approval of Agenda (Detrick)

2. Minutes and Matters Arising
   2.1 Approval of June 1997 EXCOM Minutes (Detrick)

EXCOM is asked approve the June 1997 EXCOM Meeting Minutes.

3. NSF/ODP Council Report
   3.1 NSF Management Report (Heinrichs)

3.2 Membership and Phase III Renewal (Heinrichs)

4. Country Reports

EXCOM is asked to review and comment on the Country Reports.

5. FY 1999
   5.1 Science Plan for Legs 184 to 188 (Humphris)

EXCOM is asked to review and approve the Science Plan for Legs 184 to 188.
5.2 FY 1999 Preliminary Budget (Pisias)

EXCOM is asked to review and comment on the preliminary FY 1999 budget, and decide if BCOM should meet this year.

BCOM Members are: J. Orcutt (Chair), H. Beiersdorf, R. Detrick, J. Pearce, S. Humphris. Representatives of JOI, NSF, WLS/LDEO, and ODP/TAMU attend BCOM meetings.

Coffee Break ................................................................. 10:00 - 10:30 AM

6. Addressing Phase III Funding Shortfalls

6.1 Phase III Budget Projections. How Big is the Problem? (Pisias) TAB 6

6.2 Strategies/Options (Pisias)

6.2.1 Recruiting New Members (Pisias) TAB 7

EXCOM is asked to review and comment on the current JOI strategy for recruiting new members to the Program.

EXCOM is asked to consider reactivating the International Partnership Advisory Committee (IPAC)* to work with the ODP Director in recruiting new members.

*In 1994, IPAC was chaired by Barry Raleigh. Additional members were John Malpas and Helmut Beiersdorf.

6.2.2 JOI Strategy for Implementing Partnerships with Industry (EXCOM Motion 97-2-8) and Other Types of Partnerships (Pisias) TAB 8

EXCOM is asked to review and comment on JOI’s strategy for implementing partnerships with industry.

EXCOM Motion 97-2-8
EXCOM requests that JOI explore all opportunities for industry partnership in the development of major new ODP technologies with a view to cost-sharing these developments. As an initial step, TEDCOM should be consulted on the likely potential for such joint technology projects from an industry stand point.

Please note that TAB 9 corresponds to Agenda Item 9.2.3.
SCICOM Motion 97-1-20
SCICOM Prioritizes Phase III technological developments as follows:
1. Developments essential for "any" progress on key scientific objectives of the ODP Long Range Plan
   - Microbiological Systems, Alternate Platforms
2. Developments that significantly augment achievement of scientific objectives of the ODP Long Range Plan
   - Hammer Drill Advancements, Riser-Type Drilling, Logging Innovations;
3. Developments that would enhance the science and cost effectiveness of the scientific objectives of the ODP Long Range Plan
   - Logging While Coring
   - Advanced Corks
   - Advance Borehole Observatories

- Moore Initiative

EXCOM is asked to advise JOI on whether or not Ted Moore’s Industry Partnership initiative should be pursued.

6.2.3 Cutting Costs within the Program
- Possible Options (Pisias)

Lunch .........................................................12:00 - 1:30 PM

6.3 Discussion of Action Items Addressing Phase III Funding Shortfalls
EXCOM is asked to advise JOI on possible options for meeting projected Phase III budget shortfalls.

7. SCICOM Report (Humphris)  
   7.1 Implementation of the New Structure - Update on PPGs  
   7.2 SCICOM Voting Procedures

EXCOM is asked to approve SCICOM voting procedures (Motion 97-2-4).

In order to develop voting procedures leading to the determination of a drilling schedule that are in line with the new Science Advisory Structure, SCICOM has revised PCOM Motion 96-1-5 and adopted a three-step voting procedure.
7.3 Dry-Dock Recommendations

EXCOM is asked to accept SCICOM's recommendations that

• the expansion of the Downhole Measurements Lab be carried out during the FY 99 mid-life refit of the JOIDES Resolution, if sufficient funds are available; and

• the definition, and preservation, of space for a containerized Microbiology laboratory on board the JOIDES Resolution be carried out during the dry-dock (SCICOM Motion 97-2-8).

7.4 Selected ODP Achievements for Legs 173 to 176.

**BREAK FOR THE DAY & TOUR OF BIOSPHERE 2**

**TUESDAY January 20 8:30 AM**

8. Management and Operations Reports

8.1 JOI (Pisias)

8.1.1 The 1999-2000 JOIDES Office

Geomar, Germany has been awarded the contract to host the 1998-2000 non-US JOIDES Office. EXCOM approved this selection by an e-mail vote in November 1997.

8.1.2 Status of the Search for the New Director of ODP and the New Assistant Director.

8.1.3 Update on the Implementation of Electronic Publications (EXCOM Motion 97-2-6)

8.1.4 Update on Outsourcing of ODP Publications (EXCOM Motion 97-2-7)

EXCOM is asked to review and comment on JOI's response to EXCOM Motion 97-2-7 regarding the outsourcing of ODP publications.

EXCOM Motion 97-2-7

EXCOM asks JOI to provide advice on outsourcing all or part of ODP Publications. This advice should include electronic publications options and consider legal and financial issues. JOI should report their findings at the January 1998 EXCOM Meeting.

8.1.5 JANUS Status Report

8.1.6 Public Affairs Subcommittee Update - Recommended Strategy for PR and Port Call Activities (Baker-Masson)
8.2 ODP/TAMU Management Report (Fox) TAB 21
8.2.1 Update on the Day Rate of the JR
8.2.2 Major Technology Development in ODP Phase III
   • Status of the Active Heave Compensation System
   • Status of Hammer Drilling System
8.2.3 Update on Joint Ventures

8.3 Wireline Logging Service Report (Goldberg) TAB 22

9. Planning for IODP TAB 23

The International Working Group for an Integrated Ocean Drilling Program (IWG/IODP) was established in April 1997 to explore fully the concept of a comprehensive scientific ocean drilling program for the year 2003 and beyond. The IWG/IODP met in June, following the EXCOM meeting, and for the second time on September 22, 1997, in Washington DC. At this meeting, the IWG adopted the Terms of Reference for the IWG/IODP.

9.1 International Working Group - Concept and Relationship to ODP/IODP TAB 24
9.1.1 Background on IWG (Purdy)
   • Terms Of Reference
   • Membership/Attendees

The International Working Group for an Integrated Ocean Drilling Program (IWG/IODP) was established in April 1997 to explore fully the concept of a comprehensive scientific ocean drilling program for the year 2003 and beyond. The IWG/IODP met in June, following the EXCOM meeting, and for the second time on September 22, 1997, in Washington DC. At this meeting, the IWG adopted the Terms of Reference for the IWG/IODP.

9.1.2 Summary of IWG Discussions (Purdy)
9.1.3 IWG Letter to EXCOM (Purdy) TAB 25

Following the on September 22, 1997 Washington meeting, the Co-Chairs of the IWG wrote to the Chair of the JOIDES EXCOM to formally request the assistance of the JOIDES Advisory Structure in tackling science planning, and the important technical and organizational issues associated with the establishment of a new scientific ocean drilling program beyond 2003. Specifically, JOIDES is asked to help with (1) science, (2) technical, and (3) with budgetary planning tin order to lay a firm foundation for an IODP.
9.2 Status of Planning for IODP Riser Drillship (Maruyama)
9.2.1 Report and Recommendations of the CONCORD Meeting (Larsen) TAB 26
9.2.2 Status of OD-21 Vessel - Funding and Timetable (Maruyama)
9.2.3 JAMSTEC Technology Development Project (Kinoshita) TAB 9

EXCOM is asked to endorse the JAMSTEC Technology Development Project.

9.3 EXCOM Response to IWG Letter
9.3.1 Timeline for IODP Scientific Planning (Pisias) TAB 27
- Conference to Define Science for Non-Riser Drilling
- COSOD III

EXCOM is asked to approve the timeline proposed by Nick Pisias, Acting Director of ODP, for IODP scientific conference planning culminating in a COSOD III, and involving the design of a second ship/platform.

EXCOM is asked task SCICOM with organizing a “Conference to Define the Science for Non-Riser Drilling in the 21st Century: Toward an Integrated Ocean Drilling Program”.

9.3.2 RFP for Design 2nd Ship/Platform for IODP (Pisias) TAB 28

EXCOM is asked to approve the timeline proposed by Nick Pisias, Acting Director of ODP, for issuing an RFP for the design of a second ship/platform of an IODP.

9.3.3 Mechanisms for Providing Shorter-Term Scientific/Technical Advice, and Financial Planning for IODP (Humphris) TAB 29

EXCOM is asked to approve
- the proposed structure outlined in the accompanying figure (TAB 31) for providing short-term scientific and technical advice for IODP, subject to IWG financial support for this planning effort.
- the continuation of a JOIDES/IWG ad-hoc working group to examine IODP budgetary requirements.
EXCOM is asked to establish formal liaison relationships between EXCOM and IWG.

10. Future Meetings and Other Business
10.1 Germany (June 23-24, 1998)
10.2 US (Feb. 1999)
10.3 Other Business

Meeting Adjourned
Meeting of the
JOIDES Executive Committee

June 9 -10, 1997, IFREMER, Brest, France

DRAFT MINUTES

Executive Committee - EXCOM

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<td>François Madelain</td>
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Motions of the JOIDES Executive Committee

EXCOM Motion 97-2-1
EXCOM approves the Agenda for the JOIDES EXCOM Meeting.
Proposed by Beiersdorf; seconded by Harrison.
Unanimous.

EXCOM Motion 97-2-2
EXCOM approves the Minutes of the February 1997 Washington DC Meeting as a true record.
Proposed by Orcutt; seconded by Eldholm.
Two abstentions (Mével and Taylor, who were not present at the February Meeting).

EXCOM Motion 97-2-3
EXCOM approves the FY 98 Annual Program Plan for Legs 176 to 181.
Proposed by Orcutt; seconded by Beiersdorf.
13 in favor; 3 abstentions (conflicted members - Feary, Mutter, Taylor)

Nowell noted minor mistakes in the Leg numbers for FY 98 and 99 in the Agenda Book. These will be corrected.

EXCOM Motion 97-2-4
EXCOM approves SCICOM Motion 97-1-18: The general area of drilling will remain in the Indian Ocean and western Pacific through FY 2000.
Proposed by Duce; seconded by Feary.
14 in favor; two abstentions (conflicted members - Suyehiro and Orcutt).

EXCOM Motion 97-2-5
EXCOM approves the new mail review/proposal submission procedures
Proposed by Briden; seconded by Leinen
Unanimous
### EXCOM Motion 97-2-6

The EXCOM recognizes that the Publications of ODP are an important mechanism by which the principal legacy of the program, its scientific findings, are conveyed to the scientific community, and by which an additional legacy, the scientific samples, are described to the community. We appreciate the concern of the SCICOM for the importance of this communication mechanism. We also appreciate the work that the Publications Committee has done to poll our community about its capability and its continuing commitment to advise us about the access and format of our publications.

The severe fiscal constraints imposed by member contributions anticipated for Phase III of ODP require that we exercise great care in balancing priorities for the ODP activities. First and foremost among those are to foster technological innovation and make progress toward implementing our science plan. Budget projections from our operators indicate that it would be impossible to do so if we accept the extra costs associated with the recommendation of the JOI Publications Steering Committee to continue traditional paper publication of the Initial Reports (IR) for several years.

As a result, the EXCOM reconfirms its 1996 schedule for introducing electronic and CD-ROM publication of the IR and SR volumes and phasing out paper publication. We agree to cap the volume publication budget at the levels indicated in the JOI model for FY 99 and beyond.

We have asked JOI to explore outsourcing publications as an additional option and have also asked that they check obligations for publications in the MOUs and seek relaxation of these obligations if necessary.

Proposed by Leinen; seconded by Briden.
14 in favor. One abstention (Duce); one absent (Mével).

### EXCOM Motion 97-2-7

EXCOM asks JOI to provide advice on outsourcing all or part of ODP Publications. This advice should include electronic publications options and consider legal and financial issues. JOI should report their findings at the January 1998 EXCOM Meeting.

Proposed by Stoffa; seconded by Harrison.
14 in favor. One abstention (Duce); one absent (Mével).

### EXCOM Motion 97-2-8

EXCOM requests that JOI explore all opportunities for industry partnership in the development of major new ODP technologies with a view to cost-sharing these developments. As an initial step, TEDCOM should be consulted on the likely potential for such joint technology projects from an industry standpoint.

Proposed by Mutter; seconded by Harrison.
15 in favor. One absent (Mével).
EXCOM Motion 97-2-9
EXCOM welcomes the progress made by the Nansen Arctic Drilling Program as evidenced by the Science Plan and Implementation Plan. ODP looks forward to the development of collaborative efforts with NAD. EXCOM requests SCICOM to consider the appropriate mechanism for a formal liaison with NAD.

Proposed by Eldholm; seconded by Taylor.
15 in favor. One absent (Mevel).

EXCOM motion 97-2-10.
The June 1997 EXCOM Meeting is adjourned.
Proposed by Orcutt ; seconded by Nowell.
MONDAY

1. Welcome & Introductions

1.1 Introduction of EXCOM Members, Liaisons, Guests

Detrick welcomed new EXCOM members, Mével and Feary, and noted that Suyehiro was standing in for K. Taira, the new Japanese member. Duce will be replaced by Prior, who was present as an observer, at the next EXCOM meeting.

1.2 Meeting Logistics

EXCOM participants were invited to visit L’Atalante (IFREMER) and the semisubmersible drilling rig, the SEDCO 707 (Schlumberger).

1.3 Approval of Agenda

Detrick explained the organization of the agenda.

EXCOM Motion 97-2-1
EXCOM approves the Agenda for the JOIDES EXCOM Meeting.
Proposed by Beiersdorf; seconded by Harrison.
Unanimous.

2. Minutes and Matters Arising

2.1 Approval of February 1997 EXCOM Minutes TAB 1

No corrections were made to the February 1997 EXCOM minutes.

EXCOM Motion 97-2-2
EXCOM approves the Minutes of the February 1997 Washington DC Meeting as a true record.
Proposed by Orcutt; seconded by Eldholm.
Two abstentions (Mével and Taylor, who were not present at the February Meeting).

3. Status of Phase III Renewal

3.1 NSF Report TAB 2

Heinrichs reported that all current partners are prepared to commit for 1998 to 2003 (ODP Phase III). Consequently, NSF’s basic planning is proceeding on this premise. NSF
does not have formal letters of commitment from ODP members at present, but these commitments in writing will be requested at the ODP Council Meeting later in the week. NSF is optimistic about associate membership and candidacy. The delay in being able to offer candidate membership to China is nearing resolution; the matter is in the final stages.

The Brest EXCOM is another stage in the evolution of how EXCOM and ODP Council interact. Council members were invited to attend the EXCOM Meeting as observers in order to avoid the overlap in reporting. Humphris (SCICOM Chair) and Detrick (EXCOM Chair) will attend Council as JOIDES liaisons and to deliver their respective reports. In the past, there were joint sessions because the MOUs require ODP Council to be consultative to EXCOM.

3.2 ODP Council Response to ODP Strategic Implementation Plan

The ODP Strategic Implementation Plan was finalized after the February 1997 Meeting and sent to the ODP Council. NSF has not received any comments via council to this plan and thus have assumed that the plan met the needs of the partner countries.

3.3 Country Reports - Updates on Phase III Renewal

3.3.1 Australia-Canada- Chinese Taipei-Korea (PAC RIM Consortium)

Feary expressed surprise that NSF had not received formal positive indication regarding renewal as he had understood that the formal letters of commitment had been submitted. The consortium is happy to announce the commitment to Phase III and look forward to the full integration of the new partners. Funding arrangements are fundamentally more complex. With the ship heading towards the western Pacific, there is a greater level of awareness regarding ODP science among the PAC RIM members.

3.3.2 ECOD

ECOD hopes to renew as a full member. Renewal has been agreed to by all the Nordic countries (50% of the ECOD partnership). There is uncertainty about the Italy’s level of contribution. Turkey’s continued involvement is shaky. Portugal has joined as a new member.

3.3.3 France

Mével reported that France’s position regarding renewal is positive. Pierre David, Director of IFREMER, is awaiting formal governmental approval. Following recent elections in May, France has a new government. Consequently, there may be a delay in this process.

In response to Detrick’s request, Mével clarified the statement in the French Country Report that “the mechanisms to strengthen the links with major programs are not fully settled yet”. The French perception was that the mandates of the PPGs did not go far enough in naming other global geoscience programs. Mével elaborated on other French concerns. France
wants to see a discussion of funding for alternate platforms in Phase III, even in the context of a flat budget, because the use of alternate platforms is stated in the ODP LRP. France is not equally interested in the science of all the programs, and would like to see more flexibility in the staffing of the ship to reflect this uneven interest. Fox responded that ODP-TAMU needs to know far in advance (i.e. at the time of the Program Plan development, and not just within the one to two month window of staffing) if a country wants to be more heavily represented on a particular Leg in order to ensure flexibility and stability. Briden noted that the diversity among the interests of UK scientists had been reflected by different levels of shipboard representation on ODP Legs to the great satisfaction of the UK. Detrick concluded that since TAMU has been made aware, they will be able to work with the member countries to ensure flexibility in staffing.

3.3.4 Germany

Germany confirmed its commitment to ODP through 2003, but Maronde indicated that they were awaiting the discussion on the ODP Publication Policy to see if there would be any impact on the MOU.

To assure the future of ODP, Germany is convinced that a close cooperation of scientific drilling, involving an integrated program between ocean and continental drilling, is required. The first step is the liaison relationship between the ICDP and ODP. The ODP SCICOM liaison attended the ICDP Executive Committee Meeting in Potsdam.

3.3.5 Japan

Suyehiro reported that Japan’s intent to renew for Phase III will be expressed on June 27. More time will be required to secure the funding, after which, formal approval will be given. Heinrichs said that NSF did not expect formal letters by this EXCOM Meeting, but wanted to get on record the intent of the ODP partners to renew for Phase III.

3.3.6 UK

Briden reported that NERC had approved, in principle, funding for Phase III. The UK is pleased because this follows a period when the UK looked critically at the evolution of the Program. The UK has a new government with a new budget, and it is unclear whether the budgetary restructuring underway is for the next fiscal year or the current one. Approval in principle is one thing, but renewal is not guaranteed until the MOU is signed. Briden noted the key factors underpinning the UK decision to renew - the science plan, the degree of promise in the new advisory structure, efficiency and effectiveness, financial realism influencing EXCOM, the Strategic Implementation Plan, and the move forward in the Publications Policy. The UK will continue to look at the degree to which the financial realism stays in place and whether the Publications Policy remains as forward-looking as they thought it would be. NERC has reserved funding in a constant budget line for the UK ODP.
3.3. USA

Malfait noted the "clearance issue" with respect to China's membership. NSF is firmly committed in principle to renewal for Phase III. Like the UK, the USA must also go through a number of technical steps to secure funding. NSF is not anticipating problems.

All members have indicated that they will renew for Phase III although they have not all signed on the dotted line. This is good news ensuring that ODP will continue beyond 1998 with 6 full partners. Detrick recognized the efforts of EXCOM and the National Committees in working towards this goal, and congratulated all who worked towards renewal.

4. Action Items

4.1 Approval of FY 1998 Annual Program Plan

The FY 98 Annual Program Plan is embodied in the Five Year ODP Program Plan, which was distributed separately to all EXCOM members by JOI. The FY 98 budget is outlined in detail in the Five Year Plan. Only very minor changes have been made to the FY 1998 budget that EXCOM reviewed in February. These minor modifications, on the order of tens of thousands of dollars, represent the revised costs of X-base items and also reflect some internal adjustments at TAMU.

Orcutt asked for clarification about the actual cost of an ice support vessel for Leg 178, included in the figure for Ship Operations ($869,534). Fox responded that this figure is the sum of two numbers - $176 K represents the amount spent on modifications to the JR to meet the new environmental standards of operating in the Antarctic (Antarctic Treaty), and $700 K was allocated to operate an ice vessel (although the exact cost is not yet known). The RFP for an ice vessel has been issued. TAMU recently surveyed a ship in Chile that may meet the needs of the Program and will cost less than $700 K. Unfortunately, the ship may be sold. TAMU prefers a source in the Southern Hemisphere as it will be more expensive to procure an ice ship from the Northern Hemisphere. TAMU originally requested $1 million to cover the cost of the ice boat.

EXCOM Motion 97-2-3

EXCOM approves the FY 98 Annual Program Plan for Legs 176 to 181.

Proposed by Orcutt; seconded by Beiersdorf.

13 in favor; 3 abstentions (conflicted members - Feary, Mutter, Taylor)

Nowell noted minor mistakes in the Leg numbers for FY 98 and 99 in the Agenda Book. These will be corrected.
4.2 Approval of Four-Year Ship Track

Humphris reviewed the factors considered by PCOM in scheduling beyond FY 98 (Legs 176 - 181) into FY 99 (Legs 182 and 183). In determining the Four-Year Ship Track, SCICOM considered (1) pressure from high priority science in that part of the world, and the (2) required dry dock, which will likely be in Singapore. As there is sufficient high priority science to be done in the Indian Ocean and western Pacific (many proposals in the JOIDES system in this geographic region are ready to be drilled), SCICOM agreed that the ship should stay within the area through FY 2000.

In response to a query from Harrison about the ship track diagram, Humphris explained that the map is a long-term projection over phase III, showing the ship moving into the eastern Pacific post-2003 and then possibly back into the Atlantic. Briden questioned whether this map should be publicized. Humphris said that the map was part of the Five Year Program Plan and pointed out the multiple arrows, representing possible tracks. She emphasized that SCICOM does not want to pre-guess where the ship is going.

EXCOM Motion 97-2-4
EXCOM approves SCICOM Motion 97-1-18: The general area of drilling will remain in the Indian Ocean and western Pacific through FY 2000.

Proposed by Duce; seconded by Feary.
14 in favor; two abstentions (conflicted members - Suyehiro and Orcutt).

4.3 External Mail Evaluation/Proposal Submission Procedures

The mail review/proposal submission procedures were initially formulated by the JOIDES Office with input from PCOM, SCICOM, EXCOM, NSF, and JOI. They were reviewed and commented on by EXCOM at the February EXCOM Meeting, subsequently revised, and endorsed by SCICOM at their April meeting (SCICOM Motion 97-1-10). In his review of issues surrounding this item, Detrick noted, in particular, EXCOM’s recommendation regarding the inclusion of proponents’ CVs in the proposal package.

In April, SCICOM endorsed a two step system of proposal submission, involving Preliminary and Full Proposals, which permits rejection at an early stage (if warranted) thereby preventing proposals from remaining in the ODP system ad infinitum.

SCICOM made three changes to the procedures considered by EXCOM in February:

1. Inclusion of the option for a Full Proposal to be submitted for new ideas without going through the Preliminary Proposal stage in exceptional cases when opportunities exist.

2. The matter of the submission of CVs with proposals was a controversial issue. It was decided that information on scientific background could be useful in some instances...
JOIDES Advisory Structure at present), and also in providing TAMU with recommendations for the selection of Co-chiefs. One of the requirements for the submission of Full Proposals will be the submission of CVs, limited to no more than 4 proponents (because of large number of proponents on individual proposals), or a two page summary of the background of the group of proponents. External evaluators will be asked to comment on the competence of proponents if it is deemed relevant to the science being proposed.

3. Issue of anonymity of reviewer. SCICOM agreed with EXCOM and recommended that the identity of external evaluators be removed by JOI and this information kept confidential by JOI.

Discussion:
Mutter indicated surprise regarding the controversy surrounding CVs. Humphris explained that the feeling was that a proposal should be judged on scientific merit because the people who carry out the scientific program may or may not be proponents of the original proposal. Once a proposal is scheduled, it becomes ODP science and the shipboard party includes many more and different people that those who proposed the science initially. There was concern at SCICOM that consideration of CVs could potentially bias a proposal.

Detrick inquired about the recent SSEPs meeting. Humphris said that for the first time the panels had both external evaluations, and the proponents’ responses. Consequently, the panels were able to discuss issues in greater depth than in the past. In addition, some matters not previously discussed emerged during the joint session of the SSEPs. Proposals that had been subjected to external evaluation were not ranked but prioritized into five categories on the basis of scientific merit and relevance to ODP’s Long Range Plan objectives. Proposals that should not be developed further were assigned to the fifth category. SCICOM needs this type of prioritization in order to recommend to OPCOM proposals for scheduling in August.

Taylor commended the JOIDES Office, the Site Survey Data Bank, and PPSP on the new site summary forms. He said, “They are great!” He questioned, however, the page limits for Preliminary and Full Proposals. This is to encourage proponents to express their ideas in a succinct manner and to accommodate the External Evaluation process. Mével said that 25 pages is good for reviewers as it is not too long. Taylor was concerned about the limit of 15 pages for Preliminary Proposals. Humphris said the idea is to get new ideas to the system with a rapid response to proponents indicating, “Yes, let’s work on it via an iterative process”, or “No, don’t bother”. The SSEPs will need to be active in nurturing the proposals.

Mével asked why the global geoscience programs were not considered as sources of preliminary proposals. Humphris said that the word “groups” is meant to encompass global programs. She agreed to change “groups” to “programs”.

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5. ODP Publications

5.1 Review of Current ODP Publications Strategy and Background

TAMU’s revised report on Publications was distributed to EXCOM members at the meeting. Some members noted that they had not received the CD ROM for Leg 165. This should have accompanied TAMU’s earlier report which had been mailed to members.

Falvey reviewed the current Publications Policy, approved by EXCOM in Oslo in June 1996, in which a strategy for moving towards electronic publication was laid out. EXCOM established the process, and the path to follow, but not the timetable. JOI set up a Publication Steering Committee (PUBCOM) for this purpose.

5.2 Recommendations of the JOI Publications Steering Committee

Dave Scholl, Chair of the JOI Publications Steering Committee, reported to EXCOM on the recommendations of PUBCOM, developed at their meeting on April 3-4, 1997.

Scholl noted that PUBCOM was set up to think through how best to handle the transition from printed to electronic publications in this dynamic time, when things are constantly changing. As part of their general mandate, PUBCOM was set up to provide on-going evaluation of the publications strategy, and make recommendations to JOI on any changes that should be made to the policy on the basis of what was learned. PUBCOM understood that they had a serious function, and the shift to electronic publications would proceed “only if JOI received a positive recommendation from PUBCOM” (PUBCOM draft mandate, EXCOM Agenda Book, February 97, TAB 13, pages 4-5).

Scholl reported that PUBCOM embarked on a two phased approach. The first, or alpha phase (current) is the people phase. PUBCOM sought to find out from the producers of the data and user community whether the user community could actually use the data. The second phase is intended to ensure that the strategy is in step with the direction of the scientific publications in general.

The PUBCOM Report, which Scholl presented to EXCOM, deals only with alpha phase. At the April meeting PUBCOM considered 25 pieces of information representing area and discipline views, including 13 separate reports from alpha committee members, 3 of which were commissioned. Jim Smith of the USGS presented the pitfalls of electronic publication. Smith’s most important point was that things are changing so fast that it is advisable to remain in a flexible mode and not to over-commit. The risk is that if you proceed too quickly, then you may under or overshoot, leading to isolation. PUBCOM also benefited from the experience and perspectives of members whose organizations have embarked upon electronic publications - AGU and the USGS, for example, as well as the Paleontological Journal, which is published only in electronic format. Information from Elsevier and Springer-Verlag was also available. PUBCOM found that some authors are hesitant about submitting to electronic journals.
ODP-TAMU reported to PUBCOM on the history, evolution, and future envisaged for ODP publications. This report made it clear that ODP is actually leading the field of electronic publications. ODP-TAMU already generates CDs (the IR and SR are already on CD ROMs). Scholl noted, however, that without a good printer and software, ODP's CD ROMS are not very useful. ODP is fully electronic as far as CD ROM goes. Scholl said that the next step is to go to the Internet. The questions to be addressed are: How do we get there? What is the process? And how do we keep everybody satisfied?

Scholl presented the three initial PUBCOM recommendations related to the SR, IR and obtaining more information. These were based on information evaluated by PUBCOM and the personal experience of the members, not on a robust canvassing of the community.

1. **The present strategy for the implementation of the electronic publication of the SR is properly conceived.** The SR volume should become a very powerful Internet source of information. However, the SR volume, as it is envisioned for the future, with papers going into competitive journals will serve to disperse ODP publications. This present model will fragment awareness of the Leg science as only the residual of science papers will end up in the SR Volume. Since Leg syntheses are not required, the good papers will end up in special synthesis volumes, or as journal science papers, which are not published by ODP. Traditionally, the SR volume has been the one central source for knowledge about a Leg. There is the possibility that Leg syntheses could be printed by another journal. The function of the former SR model (paper and CD ROM product) was the thematic focusing of mature leg science papers into a contextual framework. These gray Leg science papers were not intended to compete with Journal articles. Thus, PUBCOM feels that the SR should be brought back into a cohesive format. PUBCOM would like to see leg synthesis by Co-Chiefs a stated requirement. PUBCOM (Appendix 1) envisions an evolving model with transition to the Internet over a five year time frame. The concept of the future, if ODP follows the stated strategy, refocuses the SR volume to enhance electronic publications, data linkages, and may even improve marketability. The SR is conceived, as paper drops off, to be a strictly electronic publication. Journal science papers would be reprinted electronically, hotlinked, or in the case of a copyright problem, referenced. The Internet SR of the future can be hotlinked to other leg science results and the JANUS data base. Size, space and graphics will not be an issue; whatever is accepted by the ODP editorial board as a contribution can be included. PUBCOM recommends starting this transition now.

2. PUBCOM believes that the present IR strategy is moving too fast. **PUBCOM recommends continuing to offer the fully printed IR volume for 3-5 years to ensure that the primary product is used.** At present, people cannot easily view ODP files, which are very large. It is the opinion of PUBCOM that ODP will get too far ahead of the user community and risk losing 30 to 40% of the user community unless the transition is slowed. One option is to consider permitting the printed version to be marketed commercially. Highware Press in Stanford, for example, helps medical journals go electronic. As a consequence of reaching a wider readership through electronic publication, the number of subscriptions has increased for paper copies of journals. In
essence, the product was advertised on the WWW, producing an unexpected financial benefit.

3). **PUBCOM will circulate a questionnaire to discover where the user community really is.** This questionnaire has already been posted on the web page and returns are coming in. The questionnaire asks about how equipment is handled, whether CD ROM and the internet are used. The questionnaire will be distributed next by email and then by surface mail to solicit responses from the entire community. On the basis of the few responses received thus far, it appears that most users do not have screens that are big enough to view the information properly, and most are only occasionally getting information from the Internet. PUBCOM will evaluate the returns and modify the questionnaire as required. An interim report will be available in October. The questionnaire will be released into the community every 18 months to 2 years to keep abreast of developments within the user community. ODP needs to provide services, and to do this they need to know how to help the users utilize the material.

In conclusion, Scholl noted that there are financial consequences that are different from the JOI model. Scholl warned ODP not to dig themselves into a pit out from which the Program could not climb. He added that ODP should stay poised and balanced to move into the future.

**Discussion:**

Suyehiro asked about hotlinks. The information given by the hotlinks will provide users with the capability to access, import, and then download original data. Although speed is now a problem and it is currently painful to download information, this will change in the near future. T2 links and mirror sites will be required. Scholl cautioned, however, that if ODP proceeds too quickly, it may “turn the lights off” in the user community. Mével noted that the discussion of hotlinks was connected to the Internet, and not information contained on CD or the paper copy. Scholl replied that the CD ROM can be part of the hotlinks. Mével questioned the maintenance of mirror sites, noting that an expenditure of funds will be required to keep these up, and added her concern that the fate of ODP in five years time is unclear. The idea is to go forward planning for the future with the expectation that the Program will continue. Questions regarding the use of the data must be addressed. In addition, the user must be able to print hard copy to facilitate rapid perusal, which always requires a paper copy. At present, an ODP CD takes 18 hours to print and requires a lot of paper. The advantage of the CD is that you can take it anywhere. Another advantage of electronic publication is that it facilitates sophisticated data manipulation, which cannot be done with paper, and which will be essential to ODP in the future.

Beiersdorf inquired how the material would be archived for the future. Scholl said that this is a critical issue, with respect to the IR in particular, as it will be available only on CD. Taylor pointed out that paper is the absolute archive and also provides user facility. Electronic medium will augment paper. A CD is not a stable medium. Thus, ODP must be responsible for bringing data forward onto a new medium as technology progresses. Another option is to keep data on the Internet and then it will remain on a web site and/or the hard disk of a computer. Springer Verglag has a application called LINKS. Their view is
that they will continue to publish in paper as a means of archiving - they will, in effect, become their own libraries. At the same time, they are providing information on CD and Internet, and will also provide the way back to the users by migrating the data for their users/customers. Smith has also produced a report on the future role of the libraries. In the ensuing discussion regarding archival costs, Orcutt noted that AGU sets aside 3 dollars per page for this purpose. Mével said that assurances are needed that there is a mechanism in place that saves ODP data to the Internet. There is a possibility that there will not be a Program beyond 2003.

Detrick asked Humphris to summarize the SCICOM response regarding endorsement of PUBCOM recommendations and then Fox to present the updated cost information.

5.3 SCICOM Recommendations on Publications/Budgetary Implications

SCICOM motion 97-1-12 accepts the recommendations of the JOI ODP Publications Steering Committee to slow the transition to electronic publications, with the understanding that previously anticipated cost savings will not be realized. Humphris explained that SCICOM favors electronic publication, but agrees with PUBCOM that the user community is not ready and feels that it is important to slow this transition down so as not to lose them. SCICOM did not determine what needed to be cut to pay for this. The key factors considered were community readiness and the legacy of program. PCOM approved the ODP Publication Strategy last year, on the condition that implementation of the policy would proceed as necessary.

Discussion:

Publications Costs. Publications costs amount to 4% of the total Program. Fox referred to the critical tables (revised page 8 was distributed at the meeting) in Fox’s TAMU Report. He noted that the budget for the first two years is well constrained (FY 98 and 99). This is not the case for the out years as a science plan does not yet exist for these years. Fox added that the cost of accepting PUBCOM’s recommendations has been built into the out years of the five program plan as ODP/TAMU was advised by JOI to do this.

There was discussion, led by Detrick, concerning the PUBCOM budget projections. It was noted that the cost of producing an IR volume up to the point of either printing or generating a CD is the same. The cost differential is based on whether ODP produces a printed volume, or a CD ROM (except in FY98), or both. Fox explained that the discrepancies in the earlier budget figures presented by TAMU were based on the type of science that was under consideration for the out years. It was also noted that the first column of Table 7 in TAB 8 (JOI Model) is not based on a full book, but rather just the site chapters. Thus, the core photos etc. are not included. This is an option available to ODP. PUBCOM does not recommend this, but understands that there are financial considerations. Savings will be greater if it is decided not to deliver on IR or SR. Leinen said that most people opt for the cheaper solution. The inherent difficulty is that we have not populated the community with a vehicle that allows the community user to choose the cheaper medium, but it is
happening. To that extent, this is an issue that needs to be highlighted to out-funding sources. And, to the extent that ODP does not wish to underwrite the more expensive alternate, there must be some trade-offs in what can be afforded by ODP.

Mutter said that he was struck by the fact the program is making trade-offs in their consideration of this issue. New money is not coming in and the Program is spending the science dollars on publications - Science is being traded off to support something that is not innovative. To drive home this point, Fox was asked to recount what TAMU had done to accommodate the budgetary requirements of NSF in the Five Year Program Plan. Fox explained that a set of generic legs for the out years was considered, which were based on a reduced science program. Technology development was reduced by a factor of two, and staff training, which is one of the highest retention factors at TAMU, was radically reduced. Little or no upgrades in the science lab or replacement of equipment were included. With respect to electronic publications, the turnover rate of equipment needed was cut, and the ice boat (which would be required if Prydz Bay is scheduled) was cut. Thus, this cost of one million dollars is not in the budget.

Duce asked Humphris if SCICOM had considered where cost savings would come from in order to support SCICOM Motion 97-1-12. Humphris indicated that SCICOM had not. She added, however, that there are some items in the budget that SCICOM could delay, allowing the implementation of the PUBCOM recommendation to slow the transition to electronic publications in order to keep current community with us. Although there is the need to look at full range of programs to see what is being done and what can be cut, a potential example is the Data Migration Project.

**User Costs.** Mutter asks what it would cost an individual scientist to be able to use ODP electronic publications as in the JOI model. Scholl explained that there are two parts: 1) hardware (including color monitor and printer), and 2) software. If one was to start from scratch, it would cost $10,000 - $12,000 for the hardware. For the minimum amount of hardware required, the cost would be about $5000. Scholl noted that some software, like ACROBAT reader, is freeware. There are also printing costs. Photos are in color on the CD, but to print them a color printer is required. Printing out pictures of cores, for examples, costs $5 per page. Orcutt pointed out that one may not even want to print the color image; it would be a waste considering the lower resolution of a printer with few pixels. Mével said that while it is true that it is expensive to buy new equipment, this applies to anything that is done in science; consequently, people have to purchase the requisite equipment. Dalrymple stressed that this equipment is not necessarily needed at every scientist’s desk. What the scientists need is access to it.

Taylor said that the new Publications Policy was seen as a way of minimizing the budget and getting away from paper. But what he is hearing is that getting away from paper means getting away from rapid perusal and archival, and off-loads the cost to the user.

Beiersdorf expressed concern that scientists who currently lack the capability to read and use ODP electronic publications will request funds from ODP German budget to get up to speed.
Leinen wondered whether there may be opportunities for ODP to approach foundations, other than the national science funding agencies, such as those interested in global education and science in developing countries, to assist with the transition to electronic publications by helping to equip needy users.

Mutter noted the difference of $1.8 million dollars, some of which, he suggested, could go towards providing the equipment needed to bring 100 user sites up to speed. In this way, ODP could help scientists who do not have the equipment to go on line, provided cost-sharing was assumed by the member countries.

Heinrichs announced that NSF has a $100 million major new Science Initiatives called Knowledge and Distributive Intelligence. NSF will invest $100 million next year (foundation-wide) into a range of things, including digital data libraries, of which ODP electronic publications is a small slice. NSF expects that another 100 million dollars will be available for a second year. Heinrichs observed, however, that ODP is embedded in a much more complex process - the matter is not just about hardware, but represents a culture problem as well - and he questioned whether a magic solution would be achieved by just buying equipment. ODP needs a solution that satisfies its community. Heinrich's perception is that the transition to electronic media is slower in Japan and Europe than in the US. If this is the case, then ODP must determine the appropriate level at which to proceed.

**Other User Issues.** Eldholm questioned whether the reluctance in going electronic reflected the opinions of the old fogies who are holding back the transition process, and not those of post-docs and graduate students, who will soon be using these data. Scholl reiterated that ODP is on the cutting edge and going in the right direction, but stressed that you do not want to leave people behind. Mével noted that the French community is not now prepared to go to a entirely electronic medium. Their consensus is to continue printing for up to three years.

**Commercialization of ODP publications.** The possibility of a commercial vendor producing and marketing ODP publications was raised by Stoffa who admitted that it was not possible to make any recommendations on the matter at this point in time. Fox reminded EXCOM that ODP is bound to supply a number of copies to partners free of charge. Taylor inquired whether the number of obligated copies was a negotiable point. Heinrichs said that this is possible with respect to France and Japan, since their MOUs will be renegotiated. The MOUs with the other partners did not need to be renegotiated for 10 years and, thus, could be extended to 2003. The wording of the MOUs specifies that "100 units" must be supplied to the partners as "the product" of ODP. EXCOM questioned whether a CD could be regarded as the "product". The MOU also gives partners the "right to reproduce", which may pose problems regarding copyright issues and commercial publication.

**Program Renewal.** Briden said that he felt that ODP Council needed to be properly apprised about events surrounding the Publications Policy as the issue had a bearing on
Program Renewal. Briden said that he felt that ODP Council needed to be properly apprised about events surrounding the Publications Policy as the issue had a bearing on renewal considerations. He expressed his dismay that this issue had come forth in the very negative mode of a delay. ODP, he said, must surely take the lead and cannot allow the pace to be set by the slowest. He said that he hoped that when action was taken, the committee would consider innovation. Advertising the main decision as a slowing down is not right and ODP must emphasize the innovation associated with the new product that will be brought on line. Mével emphasized that ODP has determined the direction in which it wants to go. She said that it is a new world and ODP must adapt.

In summary,
- While the user community is not quite ready for electronic publications, they will be in the future.
- For stability of the Program post-1998, a conceptual master plan for publications for the next five years must be agreed upon and set now.

MONDAY PM

5.4 Discussion of Options

EXCOM examined the current ODP Publication Strategy, approved by EXCOM in Oslo in 1996, together with the recommendations of the JOI Publication Steering Committee, their budgetary implications, and SCICOM Motion 97-1-12. In summarizing the previous discussions, Detrick stated that ODP publications are one of the main products of the Program. He acknowledged the complexity of issues surrounding the Publication Policy and noted the diversity of views expressed by EXCOM members. Detrick suggested that EXCOM move forward by spending another thirty minutes to continue to explore aspects of this issue and then to meet in executive working session, permitting a frank discussion and allowing EXCOM to come to a consensus on how to proceed. Falvey reminded EXCOM of the cost implications of the PUBCOM recommendations.

Detrick asked to what extent NSF’s Knowledge and Distributive Intelligence initiative could provide ODP an opportunity to gain funds for the transition to electronic publications. Dauphin, the ODP/Ocean Science representative to this initiative, has attended several workshops aimed at defining the process by which funds will be distributed. He said that it was unclear at this point whether there will be a call for proposals or a competition for funds to enhance existing facilities; whether this will be an individual investigator program or a larger initiative. Since the full set of rules have not yet been defined, it is uncertain whether proposals may or may not come from ODP.

Further discussion of ODP’s Publication Policy and PUBCOM’s recommendations took place in an EXECUTIVE Session on Monday Afternoon. Following these deliberations, EXCOM Motion 97-2-6 was introduced by Leinen on Tuesday.
EXCOM Motion 97-2-6

The EXCOM recognizes that the Publications of ODP are an important mechanism by which the principal legacy of the program, its scientific findings, are conveyed to the scientific community, and by which an additional legacy, the scientific samples, are described to the community. We appreciate the concern of the SCICOM for the importance of this communication mechanism. We also appreciate the work that the Publications Committee has done to poll our community about its capability and its continuing commitment to advise us about the access and format of our publications.

The severe fiscal constraints imposed by member contributions anticipated for Phase III of ODP require that we exercise great care in balancing priorities for the ODP activities. First and foremost among those are to foster technological innovation and make progress toward implementing our science plan. Budget projections from our operators indicate that it would be impossible to do so if we accept the extra costs associated with the recommendation of the JOI Publications Steering Committee to continue traditional paper publication of the Initial Reports (IR) for several years.

As a result, the EXCOM reconfirms its 1996 schedule for introducing electronic and CD-ROM publication of the IR and SR volumes and phasing out paper publication. We agree to cap the volume publication budget at the levels indicated in the JOI model for FY 99 and beyond.

We have asked JOI to explore outsourcing publications as an additional option and have also asked that they check obligations for publications in the MOUs and seek relaxation of these obligations if necessary.

Proposed by Leinen; seconded by Briden.
14 in favor. One abstention (Duce); one absent (Mével).

In discussion of EXCOM Motion 97-2-6, the JOI budget model (TAB 8, page 4) was discussed again and whether, within the constraints of that model, ODP could produce a paper version of the IR volume for the next three years. Briden reiterated that he hoped that the schedule for the introduction of electronic publication would be maintained. Leinen stressed that EXCOM should follow the JOI budget model, not the penciled in volume number shown on the overhead presented by Falvey.

In discussion of the wording of EXCOM Motion 97-2-6, Fox said he appreciated the intent of the EXCOM motion, but stressed that the wording of the motion must take a firm stance to prevent the dithering back and forth that has held the ODP/TAMU Publications Office on a string for four years. Dalrymple pointed out that Fox was asking EXCOM to set a path that would allow him get on with business. Duce concurred. Falvey suggested that the intent is to proceed down the path as the policy was set out prior to the SCICOM Meeting. Mutter enquired if Fox was satisfied with the wording of the motion. Fox said that he was.
5.4.1 The Commercialization of ODP Publications

Falvey explained that the original concept of the Publications Policy went way beyond the notion of just saving money. It was a new concept in accessing information, and in providing users with innovative ways of manipulating data, which they couldn’t do from just a book. It represented a broader vision. At the same time, the policy was intended to curtail the cost of printing and paper, the price of which was escalating. For these reasons, a move to electronic publication sooner than later is intended to serve a broader community better.

Coincidentally, at the time of the PUBCOM report, an unsolicited proposal was received by JOI from Elsevier. The matter was not pursued by JOI because of the nature of the proposal. Falvey outlined the proposal. Elsevier proposed to print and publish the IR and SR on a CD Rom, and operate an Internet service as well. Elsevier would aggressively market these products. They believe that there is a market beyond the 1400 copies currently produced. Elsevier is prepared to market the volumes at the current market price, which is more than $60 per copy. Elsevier is aware that ODP would have to purchase a certain number of copies of the IR and SR to meet the free distribution requirements of the MOUs. Whether Elsevier would take over the editorial aspects as well as assembly of the product was not addressed. The current proposal is incomplete and monetary issues were not discussed. JOI pursued no further communication until the matter was raised with EXCOM. Falvey suggested pursuing the matter on a commercial basis by engaging first in confidential discussions with Elsevier, in accordance with the rules that govern contracting and acquisition. An RFP would be required, however, to ensure a competitive process. The RFP would specify conditions to reflect agreements contained within the MOUs. Falvey said that he found the marketing aspect attractive, but noted that a contract with a commercial publisher would require many constraints. For example, there are copyright issues. At present, any member may distribute without copyright constraint at present and this will have to be considered.

Discussion:
EXCOM considered the following points in their discussion on whether JOI should investigate placing ODP Publication of the IR and the SR wholly in commercial hands.

The format of the SR.
Dalrymple asked if the Elsevier proposal was in reference to the SR as it currently exists, or as envisioned for the future. Falvey said that it is expected that the IR and SR will merge with time. The IR CD will contain the very high volume data sets - photographs, core barrels descriptions, logging data, etc. - this will not change. The web version will be something that evolves.

The editorial review process. Several members questioned whether Elsevier proposed merely republishing what they were handed by ODP, or editing the volumes. Mœvel stated that there is a difference as to whether they take what they are given or do more. Falvey said that the line to be drawn was not indicated. The Elsevier proposal, however, indicated that they wished an electronic file, which seemed to suggest that Elsevier would want
want something “in progress”. Mutter noted that Elsevier publishes scholarly journals, which are peer reviewed. Elsevier has its own editors, and like AGU, editorial control is a major issue. Thus, if Elsevier does not need editorial control, it makes one wonder. Harrison asked if Elsevier proposed paying ODP. Falvery responded that nothing was said about this.

**Property rights/ownership**

Guidance is required on what property ODP wants to retain. To prevent ODP from being disenfranchised, any contract would require clear ownership of the material to be spelled out, and the contents of the product to be detailed. Mutter said that ODP needs to be certain that it does not lose control of the product; that if Elsevier markets ODP material, it does not become theirs. Orcutt asked if it was envisioned that the copyright would stay with TAMU. Falvey set the record straight stating that there is no copyright. If a publisher “reprocesses” material passed on by TAMU to create “a value added” product, however, then they will retain the copyright. The basic information, analogous to what is in the books now, will remain copyright free. Henirichs says NSF is currently facing a situation, also involving NASA and NOAA, where a “value added product” is being marketed and the publisher wishes to shut off the flow of raw data on the web because they contend that it is in competition with their product. The matter is expected to drag on for some time before it is resolved.

**Timing**

Many EXCOM members expressed the desire to have JOI explore commercialization of ODP Publications further. Heinrichs said that he was nervous about the lead time required for the exploration for the commercialization of publications at this stage since there are only a few years before the Program ends. Exploring the commercialization of publications could mean another two years of turmoil which will drag out the underlying issues related to the publications policy for a significant time. ODP needs to develop a strong vision on how to get to 2003. Leinien said that the process will drag on anyway because the area is evolving rapidly, and the potential trade-offs of the costs of publications versus science are difficult and troublesome for the Program to resolve.

**Cost issues**

$30 K is generated per year through the sale of ODP volumes (about 500 copies per year), which are traditionally purchased by libraries. Sometimes ODP volumes are provided gratis to non-member countries like China and Brazil. Orcutt pointed out that a commercial publishing house will sell ODP publications to libraries, which will cost universities, and expressed concern that this was an inappropriate area from which to be taking money. The point was made that if ODP saves money, the cost will be transferred elsewhere - to libraries, for example, and this is not a good place to put that cost.

**The value of ODP publications.**

Mutter noted that Elsevier was approaching academic communities having made the decision to aggressively market the idea of electronic publication. They appear to be planning to move well beyond just electronic publications. Mutter noted that Elsevier had obviously done more research than indicated in the written report and sees an opportunity
here in marketing ODP publications. The whole discussion would be usefully informed by
the perspective of a large publisher that produces academic journals and makes money out
of it. They have done the market research and looked into the issues. They may have many
solutions that haven't been thought of by ODP.

Conclusions
Dalrymple said that commercialization of ODP publications must be opened up to more
than just Elsevier and an RFP issued. The general feeling was that since ODP has not
defined the product, it is premature to engage in discussions with publishers. Dalrymple
felt that Falvey should not talk further with Elsevier because the scope of the proposed
service is not known. Falvey disagreed, saying that the nature of the product is defined, but
not the timetable for establishing the two different primary products. Dalrymple said that
the concept of the SR has changed from what was previously discussed. Again, Falvey
disagreed and said that the SR is no different from what was discussed in Oslo. Detrick
suggested that once the product is defined, the approach should be to address the
possibilities with a range of publishers. Elsevier should not be given the preference merely
because they submitted an unsolicited proposal. Falvey said ODP should be in the position
to ask Elsevier more about their proposed product and the cost. Harrison said that he
wanted other organizations to be able to enter at the second bullet level. It was determined
that TAMU could also respond to an RFP. Several members expressed the need to have
more information in order for ODP to proceed on this matter.

EXCOM Motion 97-2-7
EXCOM asks JOI to provide advice on outsourcing all or part of ODP Publications. This
advice should include electronic publications options and consider legal and financial
issues. JOI should report their findings at the January 1998 EXCOM Meeting.

Proposed by Stoffa; seconded by Harrison.
14 in favor. One abstention (Duce); one absent (Mevel).

6. Phase III Implementation Issues

6.1 Phase III Financial Projections (Falvey) TAB 12

EXCOM was asked to review the financial projections for Phase III prepared by JOI,
following input from EXCOM at the February 1997 Meeting.

Falvey reminded EXCOM that they had endorsed the LRP Plan option of the Strategic
Implementation Plan. He referred to the table (page 2, TAB 12), showing the financial
projections for Phase III. Detrick asked how NSF's advice to proceed on the basis of a
1.5% projected increase in comparison with 2% compound on the FY 1998 base affected
the budget for the out years. Falvey referred EXCOM to the difference at bottom, which, he
added would be affected by the PUBCOM recommendations, if they are accepted, and the
potential increase in the day rate of the ship. TAMU has an MOU with ODL regarding the
day rate. The problem is that commercial rates have increased and are currently in excess
of $150 K per day. Consequently, stockholders are putting pressure on the ship's current
owners to increase the day rate. An increase of $10,000 a day amounts to $3.5 million
a year over the current annual cost of leasing the ship. Thus, it will be a significant cost item. Negotiations for the day rate will take place over the next few months and take effect at the beginning of FY 1999. Further discussion of the ship’s day rate was halted as this is an issue involving ODL and TAMU.

There are three major differences in terms of funds available in the future - difference in the inflation factor, the publications factor and the day rate factor - which may put the LRP option (EXCOM’S preferred option) out of reach. Within the base budget there is a provision for the X-Base which includes Leg enhancements, technological development, alternative platforms, ice support vessels, etc. In a fixed budget situation, it will be impossible to keep the X-Base at the desired level to maintain innovation in the Program, and to provide the necessary Leg enhancements to meet the goals of the LRP. Detrick said that in preparing the Five Year Program Plan, ODP had gone through an exercise of trying to live within the 1.5% increase. The net outcome is a substantially reduced X-base budget, affecting both LDEO/WLS and TAMU. Trade-offs and decisions will have to be made against basic leg operating costs. Falvey reminded EXCOM that the LRP option included scope for innovation, advanced technology development, and some provision for trying to get second platform operations. The projections that he showed do not mean that ODP cannot carry out the program, but the scope for technical innovation, Leg enhancements and additional platforms will be undermined.

Fox added that in formulating their budget in the out years, TAMU chose a very restrictive minimalist generic science program. TAMU has essentially halted development and replacement of the shipboard science laboratories, cut training and technical development to the minimum level, reduced the drilling inventory to a minimum and taken a lot of extra risks in inventory so that the replacement cost of items like the BHA assembly, or drill string losses have not been projected, strung out the replacement of computer hardware in a time of crucial computing development (i.e. JANUS, increasing links and search engines, etc.) which requires TAMU to remain on the cutting edge, and reduced funds of engineering development identified in the LRP from by a factor of two to $500 K, although this means that LRP vision will be constrained.

Goldberg said that the approach taken by LDEO/WLS was like pulling a Band-Aid off a fresh cut - always best to do it quickly. He added that the FY98 target budget was only reached by removing back-up velocity tool (APS) and the gamma ray tool (HNGS) from the ship, thereby increasing the operational risk. These two tools are the least risky in that they can be covered scientifically and technically by other tools, if necessary, but it is an uncomfortable position for LDEO. Back-up tools will not be replaced, special projects and any tool deployments of LWD, GHMT, and VSP (except for one) will be eliminated and no auxiliary special tools beyond standard tools will be included in order to meet the FY99 to 2002 projected budgets (EXCOM is referred to the last table of the Five Year Plan). Consequently, the ability of LDEO/WLS to provide logging service will be seriously compromised, and the goals of LRP will not be realized.

Detrick emphasized the need for a framework within which the JOIDES science advisory committees can make the decisions, which must ultimately be made on the basis of
priorities - in the X-Base budget, technology development, alternate platforms, and the basic Leg-by-Leg programs - related to planning for FY99 and beyond. There is a big gap between what ODP wants to do and will be able to do. A first step may be to ask SCICOM and OPCOM to consider a new way of looking at the linkages between technology development and basic leg planning. EXCOM has already tasked SCICOM with examining the priorities of technology development and JOI with innovative strategies for looking outside of the traditional ODP structure to fund some technology development. Beginning with FY 99, science planning should integrate Leg-by-Leg priorities versus new technologies or alternate platforms. Humphris reminded EXCOM that since the scheduling of the ship is now slated for August, instead of December, a mechanism is in place to do planning and make choices on a Leg-by-Leg basis. OPCOM will also examine technology and innovation. Planning will be an iterative process through the fall, involving JOI, the JOIDES Office, LDEO and TAMU.

Taylor registered his alarm/distress/concern that ODP has not apprised the community at large that our hands are tied, and also accepted an LRP with goals that cannot be realized and against which the Program will be judged. What makes the Program new and exciting is in danger of going away. Leinen said that when the LRP was written, it was intended to galvanize the funding agencies to up the ante for exciting science. EXCOM only got this message regarding the budget after the LRP was published. Detrick concluded that not all innovative things will be eliminated, but choices will have be made regarding which things ODP wants to carry out as they cannot all be done. Taylor asked Humphris what message she planned to convey to the community and proponents following the EXCOM Meeting. He asked if there was going to be some vision for the decision tree in terms of the LRP. He said the community will learn very fast that the things they are planning cannot be done. Humphris said that she had no good answer on the appropriate message to send to the community at this point. She questioned, however, whether it would be useful to dissuade the community from suggesting exciting science, deep holes, alternative platforms, etc. Decisions regarding the selection/scheduling of high priority science and any trade-offs should rest with SCICOM/OPCOM.

6.2 SCICOM Response to EXCOM Motion 97-1-17 Regarding Scientific Objectives to Test the Full Drilling Capability of JOIDES Resolution

An important objective for Phase III is to understand what the two proposed drill ships will do in Phase IV. This requires knowledge of the full deep drilling capability of the JOIDES Resolution. At its February 1997 meeting, EXCOM tasked SCICOM with the identification of high priority science that requires deep drilling (EXCOM Motion 97-1-17) in order to test the capabilities of the JOIDES Resolution. As background, Humphris reviewed the development of the DRIL QUIP system (Agenda Book, TAB 13) and explained the combination of factors involved in successfully drilling deep targets. Achievements related to deep drilling and the use of the DRIL-QUIP system were noted.

SCICOM responded to EXCOM Motion 97-1-17 by considering all deep target sites (1900 m was selected as a cutoff point) associated with all active proposals and scheduled Legs. In addition, SCICOM developed a list of possible objectives for deep holes (EXCOM
The issue was also raised at the SSEPS Meeting and there was discussion of two deep holes at Mariana Izu (Proposal 372) and Ontong Java (448). Scheduled Legs 176 and 180 also contain deep targets. SCICOM was concerned that the previous thematic review process and attitudes may have discouraged proponents from proposing deep holes. To address this, the JOIDES Office will contact proponents of all active proposals to inform them of the opportunity to submit proposals for deep holes. In addition, the JOIDES Office will solicit proposals for drilling deep holes by advertising.

Mutter asked if proponents of currently active proposals will get preferential treatment. Humphris answered, no, but explained that the difference is that the advisory system will consider them seriously. Feary noted that they will not be preferentially mistreated. The table in the Agenda Book (TAB 13, pages 6-8) was developed prior to SCICOM, although one proposal was inadvertently omitted. Mutter asked if there were concerns regarding catastrophic loss. Fox answered that TAMU is excited to test the capabilities of the ship and emphasized the importance of drilling a deep hole correctly by using the full capability of the DRILL-Quip casing system to create a proper hole environment. This will reduce the chances of losing the full drill string as a result of hole collapse. Humphris noted that a hole already started cannot be reentered because it was started at a smaller diameter (the DRILL-Quip System enables a four stage stepping down casing procedure with respect to diameter). Falvey pointed out that a deep hole cannot be drilled by the JR on continental margins because of the hydrocarbon risk, and added that this may even be the case in deep water.

6.3 Major Technology Development Strategies in ODP Phase III

6.3.1 SCICOM Response to EXCOM Motion 97-1-20 on required technology development to support the Long Range Plan

SCICOM carried out a prioritization of the technical requirements identified in the Strategic Implementation Plan and mechanisms for the development of this technology at the April SCICOM in response to EXCOM in Motion 97-1-20. TEDCOM Chair, Alister Skinner, attended the meeting to assist SCICOM in the prioritization of technology development. SCICOM developed two primary categories for technology developments: “technology under development, which should be competed” (included are the Active Heave Compensation system and Hammer Drill System); and “future technology developments outlined in the Strategic Implementation Plan”. The following criteria were used to prioritize future technology developments into three groups: (1) how critical to the aims of the LRP; (2) amount of ODP effort and/or collaboration required (i.e. can be purchased off-the-shelf, therefore no ODP effort, joint ODP-industry collaboration required, of interest only to ODP, therefore maximum effort); and (3) the relative costs in relation to its scientific value. (Agenda Book, TAB 14). These groupings will allow SCICOM to select the highest priority technological developments that can be accomplished.
Stoffa noted that LWD is not on the list for the FY98 logging report. Detrick asked if SCICOM's prioritization of these innovations and developments was included in the Five Year Program Plan. Falvey said that it was not because of insufficient funds. He noted that there is a gap between the LRP option and the Program Plan budget, which is constrained by NSF's projection. The gap is widening with a remote probability of filling it. The house of cards is still there, he added, waiting for a puff!

6.3.2  JOI Strategy for Implementing Partnerships with Industry - Response to EXCOM Motion 97-1-19

At the February EXCOM meeting, EXCOM showed a clear preference for the LRP budget option presented in the Strategic Implementation Plan, which had been developed to facilitate the renewal process. In light of uncertain funding and the realities of ODP's budget that emerged at that meeting, however, EXCOM asked JOI to develop a strategy for implementing partnerships with industry to support innovation (EXCOM Motion 97-1-19). Eight major development needs were identified (Agenda Book, TAB 15, Pages 2 and 3). The estimated cost for these developments is $20.7 million.

Falvey presented three models to EXCOM to illustrate how technological innovations could be pursued. The first is a simple extension of third party development as now exists in the program permitting any partner to submit a project proposal. The benefit is enhanced cooperation among partners (i.e. European partners). ODP would work through each national office to promote this approach. If project funds became available, LDEO and TAMU would become involved as appropriate. A second option is the establishment of a Special Technology Development Fund. This separate fund, distinct from the subscriptions, is envisaged to underwrite special projects within the framework of the Program. As the base subscription rate is unlikely to rise over the period to FY 2002. The third option calls for Cooperative Technology Development Projects with industry (i.e. the CONOCO-Hydril joint venture). The same model could be applied with respect to other technology developments. The extension of the current hammer drilling system to a 20 inch diameter system serves as an example of a potential cooperative technology development project and ODP/TAMU is currently contacting industry to see if there is any interest. Some resources for these types of projects would need to come from the subcontractors (ODP/TAMU and LDEO).

Indicative budget scenarios for the three conceptual models showing high, medium and low levels of investment were presented. Falvey explained that this exercise was carried out to see if the approach was practical and had any prospect of being successful. These budget scenarios demonstrated how money (more than $20 million over five years) could be found to achieve the desired technology development, and indicated that it would be cheaper than doing it in-house. The conclusion is that, in the context of the present budget, third party tool development projects would be practical. A JIP would not be an option, however, because some level of ODP investment would be required. Given the spread of projects that ODP wishes to carry out to achieve the goals of the LRP, ODP would have to be willing to pursue all three of these options/scenarios.
To move forward, it will be necessary to have an increased awareness of the broader needs of the ODP community in order to market the needs of the Program, and to proactively pass on the message, particularly to industry. This could be achieved by meetings and focused presentations. Recently, TAMU gave a presentation at the Meeting of the Drilling Engineering Association in Houston, which served as a forum for exchanging interest in technology. Participants were representatives of industry and petroleum companies. In particular, TAMU promoted the 20 inch hammer drilling case. Falvey stated that this kind of presentation will need to go beyond Houston, to Paris, Tokyo, and Perth, which are the major centers for petroleum exploration and engineering. Scientists from both operators would need to be active in making presentations at conferences, such as the Off-Shore Technology Conference, and this will require time and money. Taylor said that he liked what JOI had done because it showed where you need to go to fund these projects, but added that he was not entirely happy with the recommendations. He questioned, in particular, the efficiency and wisdom of the expenditure of time and money by TAMU and LDEO scientists in making presentations at conferences.

The matter of contractual arrangements involved with an RFP, which Falvey stated was almost a contradiction in terms for JIPs, was discussed. ODP was able to avoid going to an RFP in the case of the CONOCO-Hydril JIP because ODP responded to an unsolicited proposal. (Appendix 2 - Overhead showing the guidelines/requirements for JIPs). Mutter asked for clarification regarding the terms of the MOUs on intellectual property rights and why this issue was inhibiting in 1995. The MOUs state that any technology developed with Program funds is shared with the signatories. ODP could not advertise for an industry partner if ODP was going to give away their intellectual property rights to all the Program partners. The Multi Sensor Track (MST) and the Pressure Core Sampler (PCS) are examples. Mutter expressed concern that efforts to pursue joint industry partnerships are thwarted by a technicality related to the MOUs. He added that there must be a way around it. Falvey explained that the unsolicited proposal mechanism was one way around the issue because the conditions that apply to the intellectual property rights are spelled out at the start. He detailed the terms of agreement with CONOCO-Hydril, noting that the confidentiality agreement for three years did not violate the MOUs. Mutter questioned whether the Conco-Hydril JIP is the correct model.

Briden suggested that over the next five years ODP must embark on a twin track approach: 1) planning through flat funding, and 2) planning to avoid the flat funding level. ODP needs to be alert to JIP opportunities and thus should have an optimistic prospectus to promote. The Five Year Program Plan is not an optimistic prospectus and the Long Range Plan is too idealistic. The only thing currently available to ODP is the Strategic Implementation Plan, which is dated. Falvey said that if ODP follows this line, then all (committee members) must be involved in its promotion and the operator must expand the description in a two page portfolio for each project development (the i.e. slim line riser for the JR). He said that it was better to articulate the project so as not to preempt the solution. The portfolio should be available to everyone to promote, and specific missions to industry service centers should be carried out, as was just done in Houston. Detrick said that the approach should not be restricted to industry, but also aimed at specific potential funding sources in partner countries or groups of countries (i.e. Europe) with particular interests (platform, tool) and
science centers in partner countries where support of advanced technology for a specific project on Leg-by-Leg might be available. Falvey appealed for help from the operators in writing up projects for this portfolio. Falvey said more flexibility is needed to carry out this approach. Detrick asked if EXCOM wanted to adopt this approach. It was generally agreed that the National Committees should pursue the matter. Beiersdorff said that Germany would be more comfortable with the 2% increase in the subscription rate to the Program. Germany had agreed to this increase previously, but has withdrawn this offer because the other partners will not increase their contributions.

Beiersdorff asked about the role envisioned for TEDCOM. Traditionally, TEDCOM has not been proactive but has operated in a responsive mode to technology put forward by TAMU and LDEO. Goldberg noted that the role of TEDCOM had been changing recently. Detrick stated that TEDCOM can operate differently in the future. Falvey noted that ODP was fortunate to benefit from the time and expertise of the caliber of individuals who are on TEDCOM. Mutter said that just the fact that these individuals are volunteers is a business decision indicating that their companies see value in their serving on ODP TEDCOM as they bring information back to the company. Detrick said that they could identify those developments that could be fruitful for JOI and ODP to pursue. TEDCOM has the expertise to provide this type of guidance. Taylor said that TEDCOM had provided valuable advice by recommending when to go ahead or not on particular projects, and when informed about the need for particular technology development. The TEDCOM chair was invited to SCICOM, Humphris added, thus the table of prioritization was based on some input from TEDCOM.

The matter of hiring a consultant to look at the value of ODP technology was raised. Mutter said it might be worth spending some money to determine the value of ODP products. He indicated, for example, that he never thought that Elsevier would try to assess value to ODP Publications. ODP’s own assessment should not be the only yardstick by which the value of ODP products are determined.

Detrick concluded that there was a consensus that JOI and operators should pursue opportunities for joint industry operations.

EXCOM Motion 97-2-8

EXCOM requests that JOI explore all opportunities for industry partnership in the development of major new ODP technologies with a view to cost-sharing these developments. As an initial step, TEDCOM should be consulted on the likely potential for such joint technology projects from an industry stand point.

Proposed by Mutter; seconded by Harrison.
15 in favor. One absent (Mével).

TUESDAY (June 10) AM

7. SCICOM Report (Humphris)
7.1 Implementation of the New JOIDES Advisory Structure (OPCOM, SSEPs, & PPGs) (Humphris)

Humphris reviewed progress in the implementation of the New JOIDES Advisory Structure. By end of June, all the new committees (except OPCOM) will have met at least once. By November, the new Advisory Structure will be commencing a new annual schedule.

- SCICOM's first meeting took place in April.
- the two SSEPs met for the first time in early June - jointly to consider cross-disciplinary proposals, and separately to consider proposals relevant to Interior or Environment thematic objectives.
- OPCOM membership was established at the SCICOM meeting.
- OPCOM will meet in August, following SCICOM. Their primary function at this meeting will be to establish a drilling schedule based on SCICOM's ranking of proposals.
- SSP and PPS will continue on from the old structure. SSP will meet in July to look at site survey readiness of proposals sent forward by the SSEPs.
- the new SCIMP met in Nova Scotia the week following EXCOM. One of their most important tasks was a visit to the ship to provide input to SCICOM on the science facilities for their preparation of dry-dock recommendations.
- TEDCOM met in early June.

Program Planning Groups. PPGs have been designed to work on themes or drilling strategies that need to be better developed in order to achieve objectives in the Long Range Plan. PCOM set up two in December of 1996, the Deep Biosphere and Long Term Observatories PPGs. John Parkes will chair the Biosphere PPG, which will have 14 members representing disciplines ranging from genetics to chemistry. ODP's biosphere goals need a lot of effort because of the Program's lack of experience in tackling the objectives related to this theme. The Observatory PPG, which will be jointly Chaired by Kiyoshi Suyheiro and Keir Becker, is necessary to focus on the details of conducting experiments in boreholes. Membership will include 12 or 13 individuals representing OSN and other groups with a general interest in seafloor observatories. The first meeting will take place on the 8 of July in MBARI. JOIDES solicited nominations for PPG membership from relevant global geoscience initiatives and national committees. Proportional representation is not a requirement for the membership of PPGs. These PPGs will exist for three years, with regular reporting to, and annual review by SCICOM in order to monitor their progress in accomplishing their mandates. Both PPGs will provide SCICOM with an interim report in August.

In April, SCICOM examined the tables of all active proposals in the ODP system (EXCOM Agenda Book, TAB 25), noted how they corresponded to the aims of the Long Range Plan and their relationship to other geoscience programs, and established four PPGs (Extreme Climates, Architecture of Oceanic Lithosphere, Shallow Water Reefs, and Climate and Tectonics). Additional PPGs will be set up in the next year; more than 6 to avoid connection with Legs per year, but 10 or less. All PPGs are derivative of the LRP.
Mével applauded the relationship between other geoscience programs and ODP, which is expressed in the mandates of the PPGs, but observed that the mandates are not consistent in spelling out this interaction. Humphris explained that the mandates were written by groups of SCICOM members and agreed to revise them to make them consistent. Harrison asked how input was obtained from the US community. Humphris replied that this was through the SCICOM members but said USSAC will become more involved in the near future. USSAC supported a workshop in the Spring of 1997 which provided names for the Biosphere PPG. Harrison noted that there are five JOI institutions not represented on SCICOM. Dalrymple requested that panel membership information be placed in the Agenda Book. This is currently available at the JOIDES Office web site, and will also be incorporated in a revised version of the Guide to the Ocean Drilling Program, which will be available both on the internet and in printed form in the future. Detrick commended the JOIDES Office for overseeing a smooth transition to the new JOIDES Advisory Structure.

7.2 SciMP's Role in Formulating Recommendations on Dry-Dock Requirements

In April, SCICOM requested that SCIMP determine a list of improvements for the science facilities onboard the JOIDES Resolution. In particular, SCIMP was asked to look at modifications for lab, meeting facilities, and accommodations (noted in the PEC IV Report), giving consideration to science goals, and to provide SCICOM with a prioritized list. This list will be evaluated by SCICOM in August in order to make informed recommendations to JOI to be passed to TAMU for implementation, depending upon the level of funds available. Orcutt noted that the funds available will be mostly for dry-dock, not necessarily for the scientific modifications. Humphris indicated that SCICOM had apprised SCIMP of the potential availability of zero dollars since the money for modification of the science facilities will need to come from elsewhere.

Fox said that TAMU and ODL have generated a list that focuses on items distinct from the lab stack which are regarded as "value-added" by the ship's owners. They are, however, trying to address some habitability issues. Any improvements to the scientific facilities will have to come from commingled funds. TAMU has estimated that $1 to $1.5 million could be spent in the lab stack alone. Detrick asked if there has been any supplement to the $6 million committed by NSF for the dry-dock. Heinrichs said that this is a Program management issue and that the $6 million is a commitment from NSF related to the renewal effort, which NSF will meet. For this reason, this issue will not be raised in the Council Meeting. Taylor suggested this could be an area for a special fund; TAMU and JOI could determine what should be done and ask for money.

7.3 ODP Achievements for Legs in FY 96-97

Humphris reported on these Leg achievements.
8. Management and Operations Reports

8.1 JOI (Falvey)

8.1.1 Selection process for the 1999-2000 non-US JOIDES Office (EXCOM Motion 97-1-9)

The RFP for the next JOIDES Office, which incorporates the recommendations made at the February EXCOM Meeting, was issued on May 8. The RFP will be open for 60 days. A technical evaluation board will be established following the EXCOM Meeting (June) to evaluate the bids and their decision is expected in mid-August. NSF will be notified by JOI on or about September 1, 1997 to facilitate NSF making an award on or about October 1. Feary asked if this time period could be extended. Falvey will determine what the correct process is in order to respond to a request for an extension from a bidding party.

The role of the current Joides Office Head/SCICOM Chair in evaluating bids was discussed. Mével suggested it would be a good idea to have input from the current SCICOM Chair. Falvey explained that the matter was a contractual issue, not a JOIDES matter, therefore the current JOIDES Office Head/SCICOM Chair may or may not be involved - this has not yet been determined. Leinen suggested that in view of the substantial changes made in the structure and the short time involved, it would be wise to include the SCICOM Chair in the process. She said that she supported Mével’s recommendation and added that EXCOM is still familiar with the functioning of the PCOM Chair, but not yet with SCICOM Chair issues. Falvey said that a previous SCICOM Chair could be considered to provide input. It was noted that there is none; Humphris is the first SCICOM Chair. Briden recommended that references to US law be removed as these were confusing to the UK when they bid for the JOIDES Office and could not be explained by JOI. When asked whether the next US JOIDES Office will be restricted to JOI institutions or opened up to non-JOI institutions, Dalrymple (JOI BoG Chair) declined to comment, saying that this item was on the Agenda for JOI BoG the next day.

8.1.2 Internationalization Update

To supplement the report in the Agenda Book, Falvey reported that JOI has a new contact in Argentina and indicated that he will try to visit Indonesia and India after the CONCORD Meeting.

Following the NAD presentation (Agenda Item 9.1), Eldholm asked Jom Thiede about the Russian participation in ODP. Thiede said that Russia cannot pay the full membership, but may be able to work with a step-wise approach. ODP has 1/12 of a membership currently open and this may provide an opportunity for the Russians.

8.1.3 Implementation/Management & Oversight
**JANUS.** Falvey reported that first phase of JANUS is in operation on board the ship. Since installation, all major details have been resolved and TAMU is working towards the successful conclusion of the project with input from the JANUS Steering Committee. The shipboard parties have expressed their satisfaction with JANUS.

**Discussion:**
Briden raised the issue of project management and communication problems involving TAMU-TAMRF, TRACOR and the JOI JANUS Steering Committee. Detrick queried whether the problems that had developed were specific to JANUS or inherent to the JOI Steering Committee model. Falvey said that he thought the problems were a matter of communication connected to the early stages of project management, which is a new way of doing business for ODP. One of the main responsibilities for project managers is external communications. The extent to which this needs to be improved within the organization requires ongoing training to ensure that communication is effective. Fox has become involved since April as the project manager and functions at the interface between TAMU, TRACOR, and the Steering Committee to resolve any communication problems that arise.

The revised **ODP Sample Distribution Policy** was approved by NSF on May 8.

TAMU is currently evaluating responses for the **Data Migration Project**.

**8.1.4 Public Affairs Subcommittee Report**

Orcutt reported that the EXCOM Public Affairs Subcommittee met on Sunday June 8. JOI and TAMU, which also has a budget devoted to PR activities, are proceeding with a number of Public Affairs activities. Orcutt praised Pamela Baker-Masson for her excellent job as Public Affairs Director.

**Port Calls.** EXCOM’s attention was called to the success of the recent port calls. In Charleston, the ship was visited by Senator Fritz Hollings who gave a talk about the importance of ODP. The Lisbon port call, which included a tribute to the former President of Portugal, Mario Suarez, and Professor Eugene Siebold(?), was the critical factor in getting Portugal to Join ECOD. Six ambassadors to Portugal from ODP member countries visited the ship. The Halifax port call will be a lower key event than the past few port calls in Canada. Monster activity is planned for the New York port call with VIPs visiting the ship by helicopter, a major dinner on board the Intrepid, and several key science speakers. In part, port call events are funded by Schlumberger. Following, New York, the next port call will be in Cape Town. As South Africa is not a member of ODP, the ship’s visit will provide an opportunity to inform people about the Program. Contacts will need to be established in South Africa because there are no local JOIDES representatives there. Local Universities and/or country offices have contributed to the success of these port calls by working closely with Pamela Baker Masson (JOI).

**Core Displays.** A core collected on Leg 169 (touted as the “hydrothermal system missing link”) was transported to Canada for a meeting of the Prospectors and Developers
Association. This type of activity, which does not jeopardize the preservation and the integrity of the core which, was a major success and represents a new public relations tool for ODP. A Smithsonian exhibition entitled, "A Blast from the Past", will also utilize K/T cores from Leg 171B, providing additional PR opportunities as more than a million and a half people are expected to visit the exhibition.

**Budget.** The budget for PR activities is $75,000, excluding salaries, which is split between JOI and TAMU. Additional funds are needed to support PR activities and members are encouraged to consider ways to support these efforts.

**EXPO 98.** Among the unbudgeted projects is ODP participation at EXPO 98. Canada may invite ODP to share their pavilion at a cost of $25 K.

**Receptions and VIP Events.** $18 K is allocated for these and ODP would like to be in a position to sponsor more of them. On occasion, supplemental funding has been provided by JOI members.

**News.** ODP has benefited from frequent media coverage. A file of clippings is available to ODP members. Maronde noted that the German three day meeting in March, at which some of the of the German ODP work on the K/T was presented, was successful from the point of PR, with good press coverage.

8.2 ODP/TAMU Management Report

Fox reported that the 1999 dry-dock requirements (page 8 of the TAMU Report, TAB 20) list replacement of the Automatic Station Keeping (ASK) system as a priority, allowing space for either extra berths or a conference center. Recommendation for the use of this space will come from SCIMP making recommendations to SCICOM which would make recommendations to TAMU through JOI. Conference space is limited and inhibits some of the interaction and exchange among the science party. Space for scientific participation is also limited at a time when the partnerships are becoming more complex and desiring to put more scientists on board. The number of bunks is a big issue, especially in international waters where national observers may sail on Legs.

8.2.1 Data Migration (status of RFP for Phase I)

ODP-TAMU is currently evaluating responses to the legacy Data Migration Project. The deadline for responses is June 15. The Data Migration Project is funded with allocations in FY 97 and FY 98. Detrick asked if the project will need to continue beyond FY 98. Falvey replied that it will be a multi-year project beyond FY 98 if ODP is to get an adequate body of migrated data.

**Discussion:**
Detrick noted that the annual level of funding for the project ($200 to 300 K) amounts to about $1 million to $1.5 million over a five year period. He expressed his opinion that, in view of the previous day's discussions regarding the need to use dollars to carry out the
science of the Program, the Data Migration Project needed to be prioritized by the JOIDES Advisory Structure against the other requirements of the Program, especially in the crunch years of FY 99 and beyond. Falvey reminded EXCOM that this project emerged as a recommendation from the PEC IV Report and was endorsed two years ago by EXCOM. Detrick pointed out that the entire budgetary situation had changed over the last two years. Orcutt noted, and Humphris confirmed, that SCICOM's Program plan for FY98 included the Data Migration Project as a priority. Detrick asked about the out-year commitments to the Data Migration Project and whether ODP (SCICOM) will have the choice of prioritizing it on a year-by-year basis. Falvey responded that, as a practical matter, there are no commitments. Fox noted that this would influence how a contract is negotiated with the successful candidate with respect to the out years. Detrick reiterated his view that a conscious effort be made to prioritize the Data Migration Project against other science. ODP may not want to commit to the out years until a prioritization has been done.

Taylor proposed a motion calling for a flexible contract for the Data Migration Project. Mutter expressed concern about the motion because he said you cannot indicate to a contractor that the rug may be pulled out from under them. Dalrymple and Falvey both noted that, in reality, ODP cannot make contractual commitments beyond the fiscal years under consideration. Orcutt said that it didn’t make sense to undertake the Data Migration Project if ODP is not committed in the long term. Taylor said that he wanted what EXCOM sees as potential budget pitfalls in the future and what they mean for prioritization recorded in the Minutes. Briden said that it was not possible to go back to produce what Taylor wanted. Taylor's motion, which was not seconded, was withdrawn.

8.2.2 Update on Joint Ventures (e.g. CONOCO/Hydril)

The final design for the CONOCO-Hydril riserless drilling system will not be easily accommodated on the JR because of the scale and complexity of the design. Nonetheless, the effort was productive because TAMU established new contacts and learned a great deal about deep water riser systems, which will enrich ODP when the Program considers a mini-riser drill rig.

At the recent Drilling Engineering Association Meeting, TAMU spoke with 30 entities regarding the large diameter Hammer-Drill system. In addition, TAMU has advertised their needs on their web page.

8.3 Wireline Logging Service Report

Goldberg highlighted the technical items that have emerged since the written Wireline Logging Service Report was submitted (Appendix 3). It has been a banner year with respect to LWD accomplishments, especially from the Barbados program (Leg 171A). For the past year and a half, logging data have been submitted from the ship back to shore. Recently, LDEO/WLS updated to a new satellite system which will be kept (on loan) through Leg 174 or until the TAMU and LDEO satellite systems are upgraded. Data from Legs are currently available on-line to the shipboard science party one week after the scientists return and then available without restriction after the one year moratorium. Logging data for 190
holes have been migrated and is available on the Internet. The LDEO/WLS web page shows 1000 hits per month.

9. Relationships with other International Programs

9.1 NAD Science Implementation Plan and Joint NAD/ODP Interests TAB 22

Dr. Jorn Thiede presented the NAD Science Implementation Plan (EXCOM Agenda Book, TAB 22) to EXCOM meeting with the aim furthering collaborations between ODP and NAD.

NAD wants to use much of ODP's structure, policies, and facilities (such as ODP repositories for archiving core) as possible through cost sharing arrangements because they do not want to reinvent the wheel. NAD proposals go through the same proposal evaluation and safety review as is normal for ODP proposals. Thiede stated that NAD would find it helpful to have a formal liaison between ODP and NAD. The NAD Secretariat, located at JOI, could help promote the connection. NAD would also like to see ODP establish either a DPG or Arctic Polar PPG, with which NAD could interact while retaining autonomy.

Discussion:
Detrick agreed that the best way to promote a relationship between ODP and NAD is through a liaison and suggested that the appropriate level should be at SCICOM level. TAMU supports the desire for coordination between ODP and NAD. In addition, Fox endorsed the notion of a liaison, saying that this will facilitate proper planning and provide the requisite lead time to ensure the selection and identification of resources for interactions between ODP and NAD. Fox explained that TAMU had received an invitation for an engineer to participate in an Arctic Drilling Workshop, which was declined because TAMU was unable to identify the resources to send someone. Detrick referred the matter of a liaison and any decision regarding establishment of an Arctic Polar PPG to SCICOM.

Eldholm said that it was his impression that ECOD could contribute funds to joint NAD/ODP drilling on a case-by-case basis without disturbing the consortium's ODP contribution. Briden said that, while he had no hard evidence, he believed there may be some sources of funds in the UK for joint drilling. Detrick asked about the possibility of matching funds from ODP for joint drilling projects. Heinrichs said that NSF's Ocean Sciences Division, which administers ODP, is not trying to ignore the Arctic, but it is not within their realm. NSF's Arctic Drilling Program, administered by Tom Pyle, has the control of the budget for polar programs.

NAD should be developed separately from ODP as this is important in a bureaucratic mode.
EXCOM Motion 97-2-9

EXCOM welcomes the progress made by the Nansen Arctic Drilling Program as evidenced by the Science Plan and Implementation Plan. ODP looks forward to the development of collaborative efforts with NAD. EXCOM requests SCICOM to consider the appropriate mechanism for a formal liaison with NAD.

Proposed by Eldholm; seconded by Taylor.
15 in favor. One absent (Mével).

9.2 International Continental Drilling Program (ICDP) Liaison Reports TAB 23

The EXCOM liaisons to the ICDP Assembly of Governors (AOG) are John Mutter and Helmut Beiersdorf. The meeting the ICDP Assembly of Governors (AOG) was canceled. The SCICOM liaison to the Executive Committee of the ICDP, Roger Larson, attended EC in Potsdam, Germany in March of 1997. Humphris reported on his behalf. The next AOG meeting will be in September; Mutter will attend if it in the US, otherwise Beiersdorf will go. The date and place are not yet firm.

9.3 Relationship between PPGs and other JOIDES Panels/Committees with Global Geoscience Programs TAB 24

9.4 Discussion of Mechanisms to Foster Stronger Ties to International Programs

This item was addressed previously under Agenda Book Item 7.1. Humphris also reported that the JOIDES Office prepared tables of all active proposals in the ODP system by LRP theme (EXCOM Agenda Book, TAB 25). These tables attempted to link proposals to international geoscience programs with interests related to ODP. The links were intended to show SCICOM with which programs ODP could potentially collaborate.

Mével asked if it would be possible to strengthen the relationship to InterRIDGE by soliciting comments on ODP proposals with overlapping interests from InterRIDGE. Humphris said this was not possible because ODP proposals are confidential. Humphris said that she had not thought through how best to establish links or foster ties to other geoscience programs, aside from the mechanism provided by the establishment of PPGs.

Taylor noted that the connections between ODP and other geoscience initiatives is fine at the SCICOM level.

10. Phase IV Planning for IODP

10.1 Update on the 1997 CONCORD Meeting

Suyehiro reported that the second CONCORD steering committee meeting took place in Copenhagen in April. Six different working groups, including one on drilling and tool technology development, are planned. The venue is National Olympic Center in Shinjuku, Tokyo. The general Schedule will include three field trips, commencing on the July 18.
Actual Meeting starts on the 22 July. There will be about 130 attendees, many more than originally anticipated. The goal of the CONCORD Meeting is to identify important key objectives to be met by riser technology (Appendix 4). By the end of the meeting 10 - 15 pages of working group reports, will be compiled by the co-chairs. Immediately after the meeting, the Japanese organizers will compose a brief report for STA to be used to try to secure budgeting for the construction of the Japanese riser ship.

10.3 IODP Planning

10.3.1 Update on recent NSF/JAMSTEC/JOIDES discussions

EXCOM endorsed the establishment of a standing "Joint STA/JAMSTEC-JOI-JOIBUSHO Management Committee to continue work on outstanding issues, and to facilitate continued communications and consultation between these three key organizations involved in developing an integrated management and structure for a scientific ocean drilling program beyond 2003 (EXCOM Consensus 97-1-23). Heinrichs reported that in following EXCOM’s advice, several important joint meetings involving NSF, JAMSTEC, JOIDES and European partners have taken place to integrate Japanese planning for the OD -21 program with ODP long range planning. To facilitate discussions, reference to a single Integrated Ocean Drilling program (IOPD), instead of OD-21 or ODP Phase IV planning, has been adopted. IODP will have international scientific planning, international scientific operations, joint management of facilities and operations, and, in a parallel model to ODP, international funding of program costs. A conceptual version of the structure was presented on an overhead (Appendix 5), showing an IODP operations and management unit, a riser vessel management unit, a JR-type vessel management unit, and Japanese and NSF Program Offices. Missing from the diagram is an entity to integrate common program management. In science planning terms, a single science planning structure to consider science planning and science objectives for both vessels is envisioned and some sort of a council/sponsor organization, similar to the present ODP Council. The basic time frame (Appendix 6) recognizes that ODP Phase III ends in 2003. Some period of time for refitting the JOIDES Resolution for operations is required. The OD-21 riser ship is expected to come on line in 2003 and start with experimental test operations in the western Pacific. Initially, operations would primarily address problems of interest to Japan, although international components will be included. This is because of Japan’s investment in the riser ship and their need to “shake-down” systems to ensure successful ship operations. The majority of the funding for these experimental operations will be provided by Japan. Conversion to fully international riser vessel operations will occur in phase B.

Heinrichs reported on the ad hoc meeting in Leiden on the 29th of April involving senior science officials from other ODP member countries (potential sponsors of an IOPD) to discuss post 2003 ocean drilling and the IOPD. At the Leiden Meeting the need for planning to cut across both ODP and OD-21 planning was identified. This led to the establishment of a formal international working group to take IOPD planning forward. This working group met immediately after the ODP Council Meeting to discuss draft terms of reference, mandates and schedules. At the Leiden meeting, it was determined that programmatic commitments to an IOPD would occur in three phases: 1) Letter of Interest
(summer 1997); 2) more formal commitments to an IODP related to the construction of the riser ship; and 3) signing of MOUs in about 2003. As a starting principle, a trilateral partnership arrangement is envisaged, involving STA (Japan) and NSF (US) with co-equal shares, and a third partner at some level of funding.

A meeting between NSF, JOIDES, and JAMSTEC also took place in Hawaii, following the April SCICOM meeting. The purpose of this meeting was to review budgeting for the operation of the OD-21 riser vessel.

10.2 OD-21 Status Report (Maruyama)

Maruyama reviewed the schedule for OD-21 planning and implementation (Appendix 7). August 1997 is important because it is when the budget request for construction of the riser vessel must be submitted to the Finance Ministry. STA recognized that international discussion prior to submission of a budget request were needed. To this end, Japan participated in the Leiden meeting and has organized the CONCORD meeting. The budget proposal will be reviewed by the financial authority and the outcome will be decided by the end of December. STA is doing their best to secure the funds for OD 21 to proceed to the next phase. The Japanese economic situation is stagnant, however, therefore the government has placed stringent constraints on budget requests.

11. Future Meetings and Other Business

Detrick acknowledged the service of the two EXCOM members for whom this was their last meeting. Bob Duce, who served on EXCOM for more than a decade, will be missed on the committee for his wisdom. EXCOM wished him well in his return to science and welcomed his replacement, David Prior. Larry Mayer, who was replaced by David Feary, may no longer attend as an observer.

The next EXCOM Meeting will be at Biosphere II in Arizona on January 19 and 20, 1998. The Summer 1998 EXCOM Meeting will be hosted by Germany. Nuremberg (KTB site) and Bonn (easy access) are possible venues. The dates are tentatively set as June 23, and 24 for EXCOM, and 25 June for the ODP Council. In terms of venues, Dalrymple voiced his preference for ease of access.

Detrick thanked EXCOM member Catherine Mével and Bernadette Metayer of IFREMER for their fine efforts in organizing this meeting.

EXCOM motion 97-2-10.
The June 1997 EXCOM Meeting is adjourned.

Proposed by Orcutt; seconded by Nowell.
3.1 NSF MANAGEMENT REPORT

Action Sought

EXCOM is asked to review and comment on the NSF Management Report.

Reports will be "taken as read" with no formal presentation to the committee. It will be assumed all EXCOM members have read these reports. There will be an opportunity for EXCOM members to ask questions of the "presenter" to clarify a particular issue in the report, or to ask for additional information.

On 1 October NSF approved the FY 1998 ODP Program Plan at a funding level of $47,400,000, with the budget including the first $3.0 million of the $6.0 million required for the FY 1999 dry-dock expenses. It is estimated that NSF will provide $30.1 million (63.5%) of the total 1998 funding, with the remainder provided by international contributions. NSF has subsequently approved an increase to the Program Plan Budget of $907,000 to support ice support vessel costs for leg 178 and continued development and testing (leg 179) of the hammer drill system. These additional funds are carry-forward of unobligated funds from FY 1997. The FY 1999 target budget will be supplied to JOI in January after resolution of the ship operation contract, future international participation (see below), and the NSF budget.

NSF has approved Dr. Nick Pisias of Oregon State University to serve as acting Program Director for ODP at JOI following the departure of Dr. Falvey on 1 January. Dr. Pisias has a long and distinguished career with the ODP having served as chair of the Planning Committee, chair of the US Science Advisory Committee, and chief scientist on leg 138.

In November NSF completed all necessary review and approval procedures for continuation of the Ocean Drilling Program beyond 1998. The National Science Board (NSB) of the NSF unanimously approved the NSF recommendation for funding of ODP in the 1999-2002 period. The Program and funding recommendation were very positively received by the NSB which also showed keen interest in the present status of planning for the post-ODP program. It is likely that the NSB will be briefed on planning for the IODP during the next year.
With respect to International commitments to participate beyond 1998 - NSF has received formal commitments from all but 2 of our international partners. Only France and the ESF Consortia have failed to provide written notice of their intent, though both members provided optimistic statements at the ODP Council meeting in Brest. It is expected that an update on their status and plans will be presented at the EXCOM meeting. The People's Republic of China has recently replied positively to NSF's invitation to join the Program as a candidate member. In mid-December NSF expects to conclude final negotiations with the PRC and their status with respect to membership will be reported by the NSF representative at the EXCOM meeting. It is expected that JOI will provide an update on the status of discussions with other potential candidate members.
4.0 COUNTRY REPORTS

4.1 Australia-Canada-Chinese Taipei-Korea (Feary)
4.2 ECOD (Eldholm)
4.3 France (Mével)
4.4 Germany (Beiersdorf)
4.5 Japan (Tamaki)
4.6 UK (Briden)
4.7 USA (Heinrichs/Pisias)

Action Sought

EXCOM is asked to review and comment on the Country Reports.

Reports will be "taken as read" with no formal presentation to the committee. It will be assumed all EXCOM members have read these reports. There will be an opportunity for EXCOM members to ask questions of the "presenter" to clarify a particular issue in the report, or to ask for additional information.

4.1 AUSTRALIA - CANADA - CHINESE TAIPEI - KOREA
A report was not submitted

4.2 ECOD

MANAGEMENT MATTERS

1. Status of Phase III
The contract for the Nordic Countries 50% share of the membership has been forwarded to ESF, Strasbourg. The non-Nordic share appears in order except for Italy and Turkey. Italy seems to delay a decision until next years budget has been approved. I have no news about Turkey.

2. IODP planning
The chairperson of the ECOD Management Committee Susanne Egelund attended the meeting of the International Working Group for an International Ocean Drilling Program (IWG/IODP) in Washington 22 September on behalf of ECOD.

The ECOD planning for this phase is still in the starting phase. There has been talk of a joint European response. Evidently the ESF European Marine and Polar Sciences (EMAPS) boards are interested in playing a role in the formation of the single European IODP
membership. There are rumors of a meeting in Bonn December 15 to discuss this issue. Regrettably, the flow of information to ECOD about such initiatives is minimal - at best.

SCIENTIFIC MATTERS

1. Meetings
(a) The EMCO Meeting was held in Zurich, Switzerland on 15 May 1997. Most of the discussion dealt with the status and strategies of renewal.

(b) The 25th ESCO Meeting was held in Stockholm 16 August 1997 prior to the Celebration of the 50th Anniversary of the Albatross Expedition providing an opportunity for the ESCO delegates to attend the Albatross meeting. The ESCO meeting was followed by a field trip focusing on the Proterozoic ore-bearing volcanic sediment sequences on the Uto island in the southern part of the Stockholm Archipelago.

(c) A SCICOM Meeting was held in Davos, Switzerland 17-23 August 1997. ECOD PPGs representatives were nominated and names of ECOD co-chiefs were proposed for FY99 legs.

(d) 6th ECOD Workshop
The workshop was held in Sundvollen, Norway 23-25 May 1997 organized by A. Myhre and E. Jansen. The workshop hosted a session on Land-Ocean Linkages including keynote speakers from European programs with links to ODP. There were a series of presentations by ECOD scientists, in particular by younger scientists from the Nordic countries and Italy. The workshop was supported financially by ESF, the Nordic Academy for Advanced Study, Industrial Liaison - Department of Geology University of Oslo, and the Research Council of Norway. Fees for all students and for the Turkish delegates were covered to enable their participation in the workshop. The workshop included field trips to the Oslo Rift to examine volcanism and rifting processes, and to Western Norway to study glacial geology.

A research workshop for students from the Nordic countries entitled "Past Global Climate Change" was held prior to the workshop funded by the Nordic Academy for Advanced Study. The 14 participants also attended the ECOD Workshop.

(e) International Conference "Mediterranean Paleoceanography - Neogene to Present". The ECOD and Geological Society of Italy co-sponsored International Conference on "Mediterranean Paleoceanography - Neogene to Present" was held in Erice, Sicily 27-30 September, 1997. Convenors: M.B. Cita and J.A. McKenzie.

The conference was followed by a 2-3 day excursion along the southern coast of Sicily.

The conference proceedings will be published as two special issues. One by the Memories of the Geological Society of Italy focusing on the Messinian. At present 18 contribution titles have been received. Another by Palaeoecology, Palaeoecology focusing on sapropels. 23 contribution titles have been received.
(f) The next ESCO Meeting will be held in Milano, Italy 14 March 1997.

2. ODP Legs
a. ECOD scientists sailing in 1997.
171A Hansen O. (Norway), Taymaz T. (Turkey)
171B Widmark J. (Sweden), Martinez-Ruiz (Spain), Jan Smit (The Netherlands)
172 Hagen S. (Norway), Raffi I. (Italy), Cagatay N. (Turkey)
173 Manatschal G. (Switzerland), Froitzheim N. (Denmark)
174A Borre M. (Denmark)
175 Hermelin O. (Sweden), Jansen J. (The Netherlands)
176 P.M. Holm (Denmark), Hertogen J. (Belgium)

ECOD scientists invited to sail in 1998 (as of November 1997).
Leg 177 Andersson C. (Norway), Marino M. (Italy), Flores J. (Spain)
Leg 178 Sjunneskog J. (Sweden), Maldonado A. (Spain). Ionio M. (Italy) will be probably invited.
Leg 180 Brooks K. (Denmark), Gerbaudo (Italy)

b. Co-Chiefs
172 Rio D. (Italy)
178 Camerlenghi A. (Italy) has been appointed for Leg 178

c. Temporary Technicians
173 Richen H. (Switzerland)
176 Ofeiggson M. (Iceland)

Numerous ECOD students have applied for Temporary Technical Support Positions for FY98 Legs. Hopefully, two students will be invited.

3. Other Initiatives
Copies of the ECOD White Paper and a summary of the last 5 years consortium activities were distributed during the JOIDES Resolution port call New York, July 1997.

4.3 FRANCE

The French Country Report is not available at present; an oral report will be presented at the EXCOM Meeting.
4.4 GERMANY

During its November 1997 meeting the DFG "Geokommission", which is the prime advisory group to DFG on all geoscientific matters, has reiterated its recommendation that it will be essential for ODP and the International Continental Drilling Program (ICDP) to cooperate closely, and has formed a working group for coordinating efforts in that direction. Particular emphasis will be put on bringing together the ODP and ICDP communities in Germany more effectively.

The fact that ODP and ICDP are seen as one major effort towards a better understanding of the Earth system is expressed in the 10th DFG planning document "Perspektiven der Forschung und ihrer Förderung - Aufgaben und Finanzierung 1997 - 2001" ("Perspectives of research and its furtherance - Tasks and financial support 1997 - 2001"), 1997, Wiley-VCH, Weinheim, New York, etc. ISBN 3-527-27036-1. In an article therein by Emmermann, H., Beiersdorf, H., and Harms, U. "Tiefbohrungen im marinen und terrestrischen Bereich" ("Deep drilling in the marine and terrestrial realm") the authors explain the significance of ocean and continental drilling in geosciences. This is the only geoscientific article in the DFG planning document and exemplifies the important role of the geosciences as a whole and drilling in particular.

DFG will hold a meeting of scientists from various disciplines and of information handling experts in early 1998 dealing with the trends in electronic publishing. The recommendations of this meeting will be important for DFG in its negotiations with NSF on the extension of the German membership.


Based on the 1995 BGR Cruise SO104 by the German R/V SONNE a "Proposal for ODP "deep hole" drilling at the northern Chilean continental margin" was submitted to the JOIDES Office. It tackles a core theme of the ODP Long Range Plan: Deformational processes at convergent margins, and in this case a destructive active continental margin. It aims at better understanding of crustal removal during tectonic erosion.

Another proposal comes from BGR dealing with the monsoonal control of the oxygen minimum zone in the Arabian Sea during the past 1 - 2 m.y. The site surveys/regional studies of both proposals were carried out with grants from the BMBF (Federal Ministry for Science, Education, Research & Technology) which also bears 50 % of Germany’s initial contribution to ODP.

The request for proposals for the July 1998 - June 1999 period of the DFG Priority Programme ODP/DSDP was sent to some 150 addressees. Review of the proposals will be in March/April 1998. Before that, review proponents will have an opportunity to
demonstrate their research goals or results already achieved at the colloquium of the Priority Program ODP/DSDP which will be held 4 - 6 March 1998 in Freiburg/Breisgau and will be organized jointly by the Geologisches Institut der Universität Freiburg, the German ODP Office at BGR and DFG which will bear the travel costs also for a number of non-German invitees.

An oral report was also given by H.B. on the CONCORD conference to the Geokommission and well received. The official conference report was sent to the members of the commision subsequently. The report to the Geokommission also referred to the IODP Working Group meeting in September 1997 in Washington. It will be necessary to seek support for the Integrated Ocean Drilling Program at all levels of decision making within Germany and Europe. Again, this should be seen in the context of the above mentioned cooperation with ICDP, a recommendation by the Geokommission.

ODP Germany has expanded its Web Site which can be found under www.bgr.de/odp/index.html (One will find for example the German leg applicants list, the most recent German ODP Circular with additional ODP related information, reports from SCICOM and other ODP meetings, lists of ODP material of general interest which can be obtained from the German ODP Office, and of course one can further surf through BGR).

4.5 JAPAN

Japan Country Report for EXCOM at Biosphere, January 1998 - Prepared by A. Taira

The Japanese ODP activities that have taken place since June, 1997 are: (1) CONCORD meeting, (2) ODP Japan committee meeting, (3) Site survey cruise, (4) IODP planning and (5) preparation for logging subcontract.

CONCORD (Conference on Cooperative Ocean Riser Drilling) was held on July 22-24, Tokyo. The attendance exceeded over 150 people from 17 different countries. The important outcome of the meeting was that the study of the earthquake processes was highlighted as the first scientific priority of the riser drilling. The report of the conference is under circulation. We appreciate the enthusiastic support from the international community.

The ODP Japan National Committee meeting was held in June. The activity for the Japanese commitment to the ODP phase III was reviewed. After the final budget approval through congress in March, 1998, Japan ODP plans to execute the MOU in late summer, 1998.

Two ODP related site survey cruises by R/V Tansei-Maru were conducted in August and November: IZANAGI sidescan sonar mapping of the eastern end of the Nankai Trough accretionary prism and OBS work in the Japan Trench related to the Western Pacific
seismic network. R/V Hakuho-Maru will sail for Ontong-Java Plateau and Northern Solomon trench area from January to March. Dr. Asahiko Taira is the chief of the mission which will include ODP site survey tasks. JOI supported scientists will also sail on this cruise.

Post-CONCORD IODP (Integrated Ocean Drilling Program) activity became prominent. Following the budget proposal by JAMSTEC, we are currently establishing a committee among JAMSTEC, STA, ORI and MONBUSHO. This should play a key role in the domestic IODP decision making process.

ORI will become a logging subcontractor of LDEO. Dr. Saneatsu Saito, who will be the chief research coordinator, is currently at LDEO for training as well as conducting cooperative research.

4.6 UK

1. UK Management structure for ODP

Following the UK's decision to continue participation in ODP during Phase III, a new national UK ODP Committee is currently being established. This Committee combines the responsibilities and activities of the two former Science and Steering Committees. Its role will be:

(i) to advise the Natural Environment Research Council (UK JOIDES member) on ODP-related policy;
(ii) to oversee national obligations as a JOIDES member;
(iii) to maximise national and international benefits of membership of the Program;
(iv) to advise on UK links with European colleagues and on other related international activities; and
(v) to promote the profile of ODP within the UK.

It will also consider and advise NERC on proposed ocean drilling activities post-2003. The Committee will also oversee the allocation of science funding to ODP-related research projects (via a Grants Sub-committee), Fellowships and in support of UK scientists' participation in ODP legs.

2. UK ODP Science Committee membership

Membership of the UK ODP Committee includes ex officio the UK EXCOM, SCICOM and SSEP representatives, together with senior independent academic and industrial members, and members of NERC's Earth Science and Technology Board. The final meetings of the UK ODP Science Program Steering Committee and Science committee were held in late October 1997. The new ODP Science Committee will meet in January
1998 with a largely new membership and a new Chair who will not be a member of any of the ODP panels.

3. NERC Science strategy and IODP

UK activity in ODP therefore continues to be a major Earth science component of the NERC programme portfolio and has an important cross-disciplinary significance in NERC's new Integrated Science Strategy.

The UK is maintaining a keen interest in the evolving plans for an Integrated Ocean Drilling Program. Following NERC's "letter of interest" in IODP sent to NSF and STA in July, the UK has formalised its intentions by becoming a member of the International Working Group (IWG/IODP) and has attended the recent meetings in Europe and Washington.

The UK sent 8 representatives to the Tokyo CONCORD meeting in July, with members or observers participating in each Working Group. There is clearly interest in deep drilling within the UK (both scientific and commercial) but the extent of that interest has not yet been quantified. The UK ODP Committee will be discussing the challenges, opportunities and priorities in respect of riser drilling, as part of an across-the-board discussion on ocean drilling after 2003, at its meeting in January 1998.

4. ODP Grant activity

In addition to support of continuing programmes (e.g. the deep biosphere programme at Bristol, and the ultra-high resolution global change programme at Southampton), and small grants to UK shipboard scientists, new grants were awarded to study high-frequency climatic variability in the Santa Barbara Basin (Thurrow, London), seismic sections across the Tonga forearc (Tappin, BGS), fluid pressure and stress in the north Barbados Ridge accretionary complex (Peacock, Birmingham) and enhanced core-log integration (Harvey, Leicester). Ben Clennell (Leeds) was awarded the Rob Kidd fellowship and fellowships were also awarded to Stephen Revets (Natural History Museum) and Ian Parkinson (Open University)

5. Shipboard and post-cruise:

Applications for shipboard science positions continue at a rate of about five for every two berths. Of the FY98 Legs, Antarctic Peninsula and Kerguelen are the most popular.


The annual UK ODP Science Forum was held at the Natural History Museum, London, in late October 1997 and was well-attended (>100 scientists). Three keynote lectures were given by Norman MacLeod and Dick Kroon (K/T boundary), Ben Clennell (Gas Hydrates) and Andy Saunders (Large Igneous Provinces), followed by a series of short presentations on highlights of past Legs and potential highlights of future Legs. Earlier, in July, Bristol hosted a Deep Biosphere workshop.
7. Panel Memberships. New panel members from 1997 include Chris MacLeod (SciMP) and Bob Whitmarsh (SSP). Changes in 1998 will include SCICOM (Alistair Robertson to take over from Julian Pearce in October) and both SSEPs (names to be announced). The August SCICOM meeting will be held in Durham, England. Alister Skinner continues as TEDCOM Chair and John Parkes has been selected as Chair of the Biosphere PPG.

The next EuroForum is to take place in Edinburgh in September 1998. There will be a short field excursion to the Ballantrae ophiolite before the meeting for a subset of participants. Significant sponsorship from oil companies has already been raised and plans are underway to publish the keynote lectures in a synthesis volume. At a meeting in Davos, the UK supported the formulation of group termed ESCOD (European Scientific Committee for Ocean Drilling) to co-ordinate European ocean drilling with an eye to European funding in the future. European SCICOM members are all members of this committee.

4.7 USA

4.7.1 U.S. COUNTRY REPORT/NSF

On October 27, 1997, the President signed the FY 1998 VA, HUD and Independent Agencies Appropriations Act which includes funding for the National Science Foundation. For NSF, the act provides for a total appropriation of $3.429 billion. This is an increase of 5% or $159 million over the FY 1997 level and $62 million more than the request for FY 1998. For Research and Related Activities, the act provides $2.546 billion, an increase of almost 5% or $114 million more than FY 1997 and $31 million more than the request. A large fraction of this increase has been identified to support an expanded plant genome research program. For the Major Research Equipment Account, the act provides $109 million, $29 million more than last year, and $24 million more than the President's request. Of this amount, $70 million is provided toward rehabilitation of the South Pole Station in the Antarctic. Additional details on the overall NSF budget are available at the NSF home page (http://www.nsf.gov)

Although the overall NSF budget for FY 1998 has been set, details at the Division and Program levels are not available at the time of preparation of this report. The NSF EXCOM representative may be able to provide additional clarification at the meeting. The overall requested increase for the Directorate of GEOSCIENCE was approximately 1.5%, with the Division of Ocean Sciences identified for approximately a 2% increase. Included in this increase is $1.5 million as an initial allotment toward FY 1999 dry-dock costs for the JOIDES Resolution.

If funded at the requested level, the total NSF Ocean Drilling Program funding will increase to $41.75 million. Of this amount, $30.1 million (72%) will be used to support joint Operations and Management activities - including $3M toward long-lead time items.
for the FY 1999 dry-dock. It is anticipated that the US Science Support Program will see modest growth to a level of approximately $5.5 million and the unsolicited grants portion of funding will see modest decrease from 1997 levels.

A report on U.S. Science Support activities administered by JOI can be found following this report.

In 1998 NSF ODP Grants activity will support 7 field programs including: 1) a detailed mapping and sampling program in the vicinity of site 735B in the Indian Ocean under the direction of Henry Dick (Woods Hole) with Canadian and British colleagues; 2) a near bottom gravity study of sites drilled in Middle Valley off the Washington coast (Marc Zumberge - Scripps Institution); 3) a January to May deployment of seismometers at the OSN site near Hawaii (Stephen-WHOI, Orcutt-Scripps); 4) high resolution seismic study along the New Jersey transect (Greg Mountain-LDEO); 5) two programs under the direction of Keir Becker (Miami) to service existing CORK sites in Middle Valley and at Barbados in collaboration with Canadian and French colleagues; and 6) initiation of experiments at Oregon margin CORK sites to study the formation of gas hydrates (Carson-Lehigh and Kastner-Scripps).

In September, NSF Ocean Science and Earth Science Staff met with the Planning Committee for the MARGINS initiative, a bold new Program to "understand the complex interplay of processes that govern the evolution of continental margins". It is NSF's intent to begin identified funding of this initiative in FY 1998 with support from the Ocean Drilling Program and Marine Geology and Geophysics Program in OCE and the Continental Dynamics Program in the Earth Sciences Division. A call for proposals is likely to be released later in the year. Further information about this initiative can be obtained from Dr. Brian Taylor (University of Hawaii) who presently chairs the MARGINS steering Committee.

On September 22, NSF Ocean Sciences Division hosted the second meeting of the International Working Group for the Integrated Ocean Drilling Program (IWG/IODP) which addresses phase IV of the JOIDES Long Range Plan. The main activities at the meeting were: 1) identification of membership on the IWG; 2) reports on science planning activities for the IODP that have recently occurred - including the CONCORD meeting in July in Tokyo and the COMPOST-II report of the US Drilling Community; 3) a discussion of STA and JAMSTEC plans for initiating OD-21 with technology development funds in 1998, which included a statement of endorsement for cooperative development activities with the Ocean Drilling Program; and, 4) identification of JOIDES to play a leading role in science planning and identification of facilities requirements for the IODP. This last item will be a major discussion point under other agenda topics at the this meeting of the Executive Committee.
4.7.2 U.S. Country Report (Part II)/JOI/U.S. Science Support Program Activities

JOI Personnel Changes.

At the SCICOM meeting in August, David Falvey announced that he had accepted the position of Director, British Geological Survey and that his tenure as JOI's Director of Ocean Drilling Programs and Principal Investigator of the USSSP Cooperative Agreement would end on December 31, 1997. A search for a new Director is underway. Nicklas Pisias will become the interim Director on January 1, 1998. Ellen Kappel, JOI's Associate Program Director of Ocean Drilling Programs and the Co-Principal Investigator of the USSSP Cooperative Agreement, will begin a year-long professional-development sabbatical in January 1998. During the sabbatical, Ellen is planning to focus on USSSP-related activities. As of this writing (December 23), plans are being made to appoint Nicklas Pisias and John Farrell, JOI's Assistant Program Director, as substitute PI and Co-PI, respectively, on USSSP. In addition, a search for a new JOI Assistant Program Director, ODP, is being conducted by Pisias and Farrell, who, in turn, will become the acting Associate Director.

USSSP Contract Year 14. A draft of the Year 14 Program Plan for the JOI/USSSP was submitted to NSF on November 10, 1997. This year would begin on March 1, 1998 and would end on February 28, 1999.

U.S. Science Advisory Committee Chair. In October 1997, Dr. Mike Arthur replaced Dr. Roger Larson as the Chair of USSAC.

COMPOST-II. The 1997 report by the U.S. Committee on Post-2003 Scientific Ocean Drilling is now available online. To view or download a copy, visit the JOI web site at www.joi-odp.org.

CONCORD. USSSP supported 22 U.S. scientists to attend the July 22-25, 1997 CONCORD workshop in Tokyo, Japan.

Site Augmentation Proposals Funded

- Lewis Abrams (UNC, Wilmington) and Roger Larson (URI): Multichannel Seismic Profiling Over Nauru Basin and Ontong Java Plateau on University of Tokyo Cruise, KH-98-1.

- Alan Mix (OSU): Leg 177 Deployment of OSU Split Core Analysis Track.


• Ralph Stephen (WHOI): VSP Hydrophone for ODP Leg 176.

• Eugene Domack (Hamilton College): Site Augmentation Proposal in Support of Shipping Costs of Seismic Equipment Used in the Palmer Deep, Antarctica, During Leg 178.

Workshop Proposals Funded


JOI/USSAC Ocean Drilling Fellowship Program

Fellowships were awarded in July 1997 to:

Stefanie Brachfeld, University of Minnesota
Rock-magnetic and paleomagnetic techniques for the examination, correlation, and dating of Holocene paleoclimate signals in Antarctic glacial-marine sediments, ODP Leg 178 (one year, shipboard)

Stephen Schellenberg, University of Southern California
Geochemical and faunal analyses of deep-ocean ostracodes during two transient climate extrema of the Paleogene: A test of benthic foram d18O-based climate reconstructions using ostracode Mg:Ca ratios, ODP legs 113 & 120, DSDP Leg 86 (one year, shorebased)

Michael Helgerud, Stanford University
Experimental Measurement and Theoretical Modeling of the Physical Properties of Sediments Containing Gas Hydrate, ODP legs 112,146, &164. DSDP Leg 84 & others (one year, shorebased)

ODP “Greatest Hits” Abstract Volume At the October 1997 USSAC meeting, the great success of this publication was discussed. All 3,000 copies from the first print run have been distributed, and an order for a reprint run of 10,000 was issued. The copies have arrived and are available from JOI. Creation of a second printed volume of “hits” was encouraged. All of the volunteered “hits” not included in the printed volume are now online at www.joi-odp.org.
Post-Cruise Scientific Research Proposals  From June 1 to December 31, 1997, 57 post-cruise scientific research proposals were formally approved for funding by JOI.

Leg 174A and the New York port call

On Sunday, July 20, 1997 over 400 members and friends of the ODP scientific community participated in the JOI/ USSSP-sponsored “Open Ship Day” in New York City during the JOIDES Resolution port call. Visitors from as far away as Virginia and Massachusetts began the day by hearing scientific presentations by Drs. Susan Humphris (WHOI), Jamie Austin (UTIG), Nick Christie-Blick (LDEO), and Peter deMenocal (LDEO). After browsing through several ODP-related displays, visitors toured JOIDES Resolution where they also enjoyed brunch. In cooperation with LDEO/BRG, Schlumberger produced a dynamic display highlighting logging technology. The event provided a great opportunity for scientists, families, and students to see firsthand the capabilities of JOIDES Resolution. (from the July 1997 JOI/USSAC Newsletter)

JOI/USSAC Newsletter  The July and November 1997 issues of the newsletter were published and distributed. These issues can be viewed on-line at www.joi-odp.org.

1997/98 JOI/USSAC Distinguished Lecturer Series

The following institutions were chosen to host Distinguished Lecturers during the 1997/98 academic year. Over 60 applications were considered after the April 4 application deadline.

Jamie Austin, University of Texas, Austin

Global sea-level fluctuations: ODP’s inaugural expedition to the New Jersey continental shelf

• College of William and Mary, Williamsburg, Virginia
• Five College Coastal and Marine Sciences Program, Northampton, Massachusetts
• Auburn University, Auburn, Alabama
• Vanderbilt University, Nashville, Tennessee
• Trinity University, San Antonio, Texas
• University of Houston, Houston, Texas

Margaret Delaney, University of California, Santa Cruz

A focus on phosphorus

• Ohio University, Athens, Ohio
• Appalachian State University, Boone, North Carolina
• University of Vermont, Burlington, Vermont
• Harvard University, Cambridge, Massachusetts
• Humboldt State University, Arcata, California

Gregor Eberli, University of Miami
Sea-level changes: The pulses of sedimentation on carbonate platform margins

- University of Maine, Orono, Maine
- University of Kentucky, Lexington, Kentucky
- University of Arkansas, Fayetteville, Arkansas
- Williams College, Williamstown, Massachusetts
- University of Georgia, Athens, Georgia

Deborah Kelley, University of Washington

Volatile-fluid evolution in submarine magma-hydrothermal systems

- South Dakota School of Mines and Technology, Rapid City, South Dakota
- Montana Tech. of the University of Montana, Butte, Montana
- Bowling Green State University, Bowling Green, Ohio
- Bloomsburg University of Pennsylvania, Bloomsburg, Pennsylvania
- Scripps Institution of Oceanography, La Jolla, California

Larry Peterson, University of Miami

Climate change in the tropical Atlantic: Clues to patterns and processes from the Cariaco Basin

- University of Pittsburgh, Pittsburgh, Pennsylvania
- Lafayette College, Easton, Pennsylvania
- Michigan State University, East Lansing, Michigan
- University of Wisconsin, Madison, Wisconsin
- University of Florida, Gainesville, Florida

Haraldur Sigurdsson, University of Rhode Island

Global episodes of explosive volcanism: Evidence from ODP Leg 165

- Arizona State University, Tempe, Arizona
- Brigham Young University, Salt Lake City, Utah
- Colorado State University, Fort Collins, Colorado
- Northern Illinois University, DeKalb, Illinois

1998/99 JOI/USSAC Distinguished Lecturer Series

The six lecturers for the 1998/99 Series, their home institutions, and their tentative lecture titles are listed below. A flyer/application for the 1998/99 Series will be available in January 1998.

Dr. Richard Norris, Woods Hole Oceanographic Institution

Aftermath of the Apocalypse: The K-T extinction and Recovery of Marine Ecosystems

Dr. Hilary Olson, University of Texas Institute for Geophysics
Application of Sequence Biostratigraphy to Understanding Sea-Level Change on the New Jersey Margin

Dr. Jim Channell, University of Florida
Paleomagnetic intensity records from the North Atlantic: applications to stratigraphy and geochronology

Dr. Peter deMenocal, Lamont-Doherty Earth Observatory
Pliocene-Pleistocene African Climate and Paleoenvironments of Early Hominid Evolution

Dr. Rick Murray, Boston University
Assessing Marine-Terrestrial Linkages: The ODP Record of Panamanian Uplift, Caribbean Tectonics, and Andean Orogeny

Dr. Julie Morris, Washington University
Getting Sedimental about Subduction
ODP SCIENCE PLAN
LEGs 184-186 (FY 1999) & LEGs 187-188 (FY 2000)
5.1 FY 1999: SCIENCE PLAN FOR LEGS 184 TO 188.

Action Sought:

EXCOM is asked to review and approve the Science Plan for Legs 184 to 188.

Background:

In August, SCICOM examined drilling proposals contained in the FY 1999 ODP Drilling Prospectus. Following a thorough discussion of each proposal under consideration, the proposals in the Prospectus were ranked by SCICOM, and a subset forwarded to OPCOM for possible scheduling as drilling legs. OPCOM met directly after SCICOM (August 22-23rd, 1997). Susan Humphris, the joint SCICOM/OPCOM Chair, directed OPCOM to develop a schedule based on the top 11 ranked proposals for four to six legs to follow Leg 183. OPCOM discussion of each proposal focused on the SCICOM ranking, site survey readiness, potential safety and pollution considerations, technological factors, operational considerations, research clearance issues, post-Leg 163 heave restrictions in shallow water, and budgetary considerations. OPCOM devised a drilling schedule for Legs 184 to 188 which was subsequently approved by SCICOM (SCICOM Motion 97-2-13) in an e-mail vote in early September 1997.
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December 5, 1997
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<th>Cruise Dates</th>
<th>Scientific Objectives</th>
<th>Relevance to ODP’s Long Range Plan</th>
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<tr>
<td>176</td>
<td>Hole 735B Dick (US) and Natland (US)</td>
<td>15 Oct.-10 Dec. 1997</td>
<td>To deepen Hole 735B in order to determine the nature of the magmatic, metamorphic, tectonic and hydrothermal processes in the lower ocean crust.</td>
<td>• LRP Initiative III, “Exploring the Deep Structure of Continental Margins and Oceanic Crust”</td>
<td>ICDP, InterRIDGE</td>
</tr>
<tr>
<td>177</td>
<td>Southern Ocean Paleooceanography Hodell (US) and Gersonde (FRG)</td>
<td>15 Dec. 1997 to 9 Feb. 1998</td>
<td>To reconstruct the paleooceanographic and climatic history of the southern high latitudes.</td>
<td>• LRP Initiative 1, “Understanding Natural Climate Variability and the Causes of Rapid Climate Change”; • “Understanding Earth’s Changing Climate”</td>
<td>ANTOSTRAT IMAGES</td>
</tr>
<tr>
<td>178</td>
<td>Antarctic DPG 1 (Western Antarctic Peninsula) Barker (UK) and Camerlenghi (ESF/Italy)</td>
<td>14 Feb. to 11 April</td>
<td>To advance knowledge of the role of the Antarctic ice sheet in global climate dynamics over the past 6-10 Ma.</td>
<td>• Initiative 1, “Understanding Natural Climate Variability and the Causes of Rapid Climate Change”; • “Understanding Earth’s Changing Climate” • “Causes and Effects of Sea-Level Change”</td>
<td>ANTOSTRAT IMAGES Cape Roberts Project</td>
</tr>
<tr>
<td>Leg</td>
<td>Mission</td>
<td>Dates</td>
<td>Objectives</td>
<td>Initiatives</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>-------------</td>
<td>--------------------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
<td></td>
</tr>
</tbody>
</table>
| 179 | NERO    | 16 April to 4 June | 1) To provide a site for the installation of a broadband ocean seismometer and instrument package for ION; SWD and OSE Ancillary Programs will also be carried out.  
2) To test the Hammer Drilling system; | Initiative II, "In Situ Monitoring of Geological Processes" |
|     | Casey (US) |             |                                                                                             | ION, BOREHOLE SEIZE DEOS |
|     | Hammer Drilling Test (Pettigrew - ODP/TAMU) |             |                                                                                             |                                                                                                   |
| 180 | Woodlark Basin | 9 June to 4 Aug. | To investigate the role of low-angle normal faulting in continental break-up, and the nature of the continent-ocean transition. | LRP Initiative III, "Exploring the Deep Structure of Continental Margins and Oceanic Crust"  
"Investigating Deformation of the Lithosphere and Earthquake Processes" |
|     | Taylor (US) and Huchon |             |                                                                                             |                                                                                                   |
| 181 | SW Pacific Gateway | 9 Aug. to 4 Oct. | To reconstruct the stratigraphy, paleo-hydrography and dynamics of the DWBC and related water masses since the early Miocene. | "Understanding Earth’s Changing Climate" |
|     | Carter (PacRim-Aus) and McCave (UK) |             |                                                                                             | IMAGES, ANTOSTRAT |

4
### TABLE 2: FY 1999 JOIDES Resolution Operations Schedule

<table>
<thead>
<tr>
<th>Leg</th>
<th>Program &amp; Co-Chief Scientists</th>
<th>Cruise Dates</th>
<th>Scientific Objectives</th>
<th>Relevance to ODP's Long Range Plan</th>
<th>Initiatives with Related Objectives</th>
</tr>
</thead>
</table>
| 182 | Cenozoic Carbonates of the Great Australian Bight: Hine (US) and Feary (Australia) | 9 Oct. to 4 Dec. | To document the evolution of a large, high-to mid-latitude cool water shelf carbonate platform throughout the past 65 Ma. in response to oceanographic and biotic change. | • "Causes and Effects of Sea Level Change”  
• "Sediments, Fluids, and Bacteria as Agents of Change”  
• "Understanding Earth’s Changing Climate” |  

| 183 | Kerguelen LIP: Coffin (US) and Frey (US) | 9 Dec. 1998 to 7 Feb. 1999 | To investigate the origin, growth, compositional variation, and subsidence history of the LIP formed by the Kerguelen Plateau and Broken Ridge. | • "Exploring the Transfer of Heat and Material to and from Earth’s Interior” | IAVCEI-LIPs |

| 184 | East Asian Monsoon History | 12 Feb. to 9 April | To document the evolutionary development and variability of the East Asian monsoon in order to better understand the relationship between mountain uplift, monsoon evolution, and global cooling. | • "Understanding Earth’s Changing Climate”  
• "Causes and Effects of Sea-Level Change” | IMAGES |
| 185 | Mariana-Izu Convergent Margin | 14 April to 9 June | To investigate the solid Earth geochemical cycle by mass balance of the inputs and outputs, and crustal components recycled to the volcanic arc and back-arc at this convergent margin. | “Exploring the Transfer of Heat and Material to and from Earth’s Interior” |
| 186 | W. Pacific Geophysical Network - Japan Trench | 14 June to 9 Aug. | To drill two boreholes in the accretionary wedge near the Japan trench, to serve as long-term geophysical observatories. | Initiative II, “In Situ Monitoring of Geological Processes”

ION, OSN
IRIS
BOREHOLE
SEIZE
VENUS
DEOS
### TABLE 3: FY 1998 JOIDES Resolution Operations Schedule

<table>
<thead>
<tr>
<th>Leg</th>
<th>Program &amp; Co Chief Scientists</th>
<th>Cruise Dates</th>
<th>Scientific Objectives</th>
<th>Relevance to ODP’s Long Range Plan</th>
<th>Initiatives with Related Objectives</th>
</tr>
</thead>
<tbody>
<tr>
<td>187</td>
<td>Australia-Antarctic Discordance (AAD)</td>
<td>Oct. to Dec.</td>
<td>To investigate relationships among ocean crustal composition, mantle composition, spreading and magma supply rates at the AAD.</td>
<td>• “Exploring the Transfer of Heat and Material to and from Earth’s Interior”</td>
<td>InterRIDGE</td>
</tr>
<tr>
<td>188</td>
<td>Prydz Bay Glacial History</td>
<td>Dec. to Feb.</td>
<td>To advance knowledge of the role of the Antarctic ice sheet in global climate dynamics over the past 6-10 Ma.</td>
<td>• Initiative 1, “Understanding Natural Climate Variability and the Causes of Rapid Climate Change”</td>
<td>ANTOSTRAT IMAGES</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• “Understanding Earth’s Changing Climate”</td>
<td>Cape Roberts Project</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• “Causes and Effects of Sea-Level Change”</td>
<td></td>
</tr>
</tbody>
</table>

7
SCIENCE PLAN FOR LEGS 184 - 186 (FY 1999) & 187 - 188 (FY 2000)

THE ODP LONG RANGE PLAN (LRP)

In 1996 ODP published a Long Range Plan that outlines new directions for scientific research into the next century that are built on the Program’s outstanding record of achievement. The Long Range Plan identifies two major research themes: Dynamics of Earth’s Environment, and Dynamics of Earth’s Interior. These themes encompass a vast range of fundamental scientific questions to be explored by ocean drilling. Within these themes, the ODP will emphasize three frontier initiatives which capitalize on new drilling and logging technologies and on advances in our scientific techniques and conceptual frameworks: (1) Understanding natural climate variability and the causes of rapid climate change, (2) In situ monitoring of geological processes, and (3) Exploring the deep structure of continental margins and oceanic crust. ODP will also begin a pilot project to explore the nature and extent of Earth’s Deep Biosphere.

These initiatives directly address many aspects of our changing planet that concern society, such as natural resources, global environmental change, risks from earthquakes, volcanoes, and sea-level rise, and the capacity of Earth to sustain life. The pursuit of these initiatives complements and extends other scientific challenges that the ODP will address, and gives the Program the flexibility to pursue new challenges as they emerge.

The Ocean Drilling Program, as it is presently structured, is slated to end in the year 2003. In recognition of the value of scientific ocean drilling to understanding Earth’s history and systems, a substantial planning effort is currently underway for a new international Integrated Ocean Drilling Program (IODP) to extend scientific ocean drilling beyond 2003. This planning effort combines the scientific goals of the JOIDES ocean drilling community set forth in ODP’s Long Range Plan, with those of Japan’s OD-21 (Ocean Drilling in the 21st Century) Program. IODP planning acknowledges that, in addition to drilling with a vessel with similar capabilities to the JOIDES Resolution, a riser drilling capability is essential to achieving the ambitious scientific goals in ODP’s Long Range Plan and the OD-21 Plan.

As part of this planning effort, a Conference on Cooperative Ocean Riser Drilling (CONCORD) was held in July of 1997 in Japan under the sponsorship of JOIDES, Japan’s Science and Technology Agency (STA) and the Japan Marine Science and Technology Center (JAMSTEC). The conference was attended by over 150 international Earth scientists and drilling engineers who reiterated the need for a new generation deep water drilling vessel, equipped with a riser or riser-type system, that will allow access to deeper and more challenging Earth environments. In addition, participants identified a range of fundamentally important scientific problems that can be addressed only by drilling deep into the Earth.
The Science Plan for Legs 184 - 188 (FY 1999-2000) includes comment on how each of the newly scheduled programs address goals outlined in the 1996 ODP Long Range Plan, and how their objectives relate to those of other international geoscience programs.

**SCICOM/OPCOM DEVELOPMENT OF THE SCIENCE PLAN**

At the August SCICOM Meeting, drilling proposal presentations were delivered by SCICOM Watchdogs who commented on the science advances likely to be achieved. Following a thorough discussion of each proposal, the proposals in the Prospectus were ranked by SCICOM according to the procedure set forth in SCICOM Motion 97-2-4. The resulting rankings are contained in SCICOM Motion 97-2-5.

**SCICOM Motion 97-2-4**

In order to align the voting procedures with the new Science Advisory Structure, SCICOM revises PCOM Motion 96-1-5 and adopts the following three-step voting procedure for purposes of determining a drilling schedule. **Conflicted SCICOM members will be excluded from this entire process.**

**Step 1:** Choose programs to retain for purposes of an integrated global scientific ranking, based on advice from the SSEPS as to their priority and relevance to the ODP Long Range Plan:

*Option 1:* Panel consensus on recommendation of Chair;

*Option 2:* Show-of-hands vote on each drilling proposal, with retention of a proposal for ranking based on 50% or more of votes in favor.

**Step 2:** Rank proposals based on scientific quality and priority. Given X programs retained from the previous step, un-conflicted SCICOM members will rank programs from 1 to X, on a signed paper ballot. After voting, written ranks of each program by each voter will be tabulated and the mean ranking and standard deviation of each program will be calculated. Paper ballots will be retained in the records of the meeting. A list of proposals that SCICOM wishes to be scheduled will then be determined from the ranked list, and will be forwarded to OPCOM.

**Step 3:** OPCOM will then prepare a draft schedule which will be sent to SCICOM for consideration of quality of the proposed schedule as a whole and the budgetary implications. SCICOM will vote by e-mail to accept or reject the schedule proposed by OPCOM, based on a simple majority of votes cast. Rejection of the schedule at this stage dictates the preparation of a new schedule by OPCOM.
### SCICOM Motion 97-2-5

SCICOM approves the following ranking for programs to be considered for scheduling by OPCOM in FY'99 and beyond:

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Program Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>484 East Asian Monsoon</td>
</tr>
<tr>
<td>2</td>
<td>426 Australia-Antarctic Discordance</td>
</tr>
<tr>
<td>3</td>
<td>445 Nankai Trough</td>
</tr>
<tr>
<td>4</td>
<td>472 Izu-Mariana Mass Balance }</td>
</tr>
<tr>
<td>4</td>
<td>455 Laurentide Ice Sheet Outlets }</td>
</tr>
<tr>
<td>6</td>
<td>490 Prydz Bay</td>
</tr>
<tr>
<td>7</td>
<td>448 Ontong-Java</td>
</tr>
<tr>
<td>8</td>
<td>465 SE Pacific Paleoceanography</td>
</tr>
<tr>
<td>9</td>
<td>486 Paleogene Equatorial Pacific Transect</td>
</tr>
<tr>
<td>10</td>
<td>431A West Pacific Seismic Network (Japan Trench Sites)</td>
</tr>
<tr>
<td>11</td>
<td>431B West Pacific Seismic Network (ION sites)</td>
</tr>
</tbody>
</table>

Scheduling for FY '99 is to be in the general area of the Indian Ocean and Western Pacific. Some of these programs require modification before final approval of drilling plans by SCICOM. Proponents will be informed of the requested modifications by correspondence from the SCICOM Chair.

The following proposals, ranked below the above proposals, are returned to the ISSEP and ESSEP for revision, external review and/or comment, as detailed in correspondence to the proponents by the SCICOM Chair (and copied to the SSEPs Chairs).

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Program Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td>355 Peru Gas Hydrates</td>
</tr>
<tr>
<td>13</td>
<td>451 Tonga Forearc</td>
</tr>
<tr>
<td>14</td>
<td>463 Shatsky Rise</td>
</tr>
<tr>
<td>15</td>
<td>450 Taiwan-Arc Continental Collision</td>
</tr>
<tr>
<td>16</td>
<td>499 ION Equatorial Pacific Site</td>
</tr>
</tbody>
</table>

**Note:**

1. SCICOM split Proposal 431, Western Pacific Geophysical Network, into two parts, A and B, on the basis of the different objectives associated with the sites.
2. SCICOM motion 97-1-18 indicates that the area of operations for the drill ship is in the western Pacific and the Indian ocean. Three proposals (455, 465, and 486) ranked in the top 11 do not fall within that area.
3. The top 11 proposals will not go through another round of external review. Those not scheduled (445, 455, 448, 465, and 486) will be re-ranked by SCICOM, along with other proposals, in August of 1998.
4. SCICOM returned reviews for all proposals not sent forward to OPCOM for scheduling, as well as those sent forward but not scheduled, to proponents.
The OPCOM Meeting (Davos, August 22-23rd, 1997), which was also chaired by Susan Humphris, directly followed the SCICOM Meeting. Since OPCOM had been newly created as a subcommittee of SCICOM, Humphris reviewed the mandates, function, and composition of the committee. She explained the ranking of the proposals considered by SCICOM and directed OPCOM to develop a schedule based on the top 11 ranked proposals (SCICOM Motion 97-2-5) for four to six legs to follow Leg 183.

Discussion of each proposal focused on the following topics: SCICOM ranking, site survey readiness, potential safety and pollution considerations, technological considerations (core recovery, enhancements to the standard set of logging tools, use of re-entry cones, and casing), operational considerations (weather - typhoons, ice cover, currents, and transit times between potential drilling sites), research clearance issues, post-Leg 163 heave restrictions in shallow water, and budgetary considerations. OPCOM devised a drilling schedule for Legs 184 to 188 which was subsequently approved by SCICOM (SCICOM Motion 97-2-13) in an e-mail vote in early September 1997.

**SCICOM Approval 97-2-13**

SCICOM approves by e-mail the schedule for FY'99 (and beyond) as follows:

<table>
<thead>
<tr>
<th>Leg</th>
<th>Dates</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leg 184</td>
<td>Feb - April</td>
<td>East Asia Monsoon</td>
</tr>
<tr>
<td>Leg 185</td>
<td>April - June</td>
<td>Izu-Mariana Mass Balance</td>
</tr>
<tr>
<td>Leg 186</td>
<td>June - August</td>
<td>W. Pacific Geophysical Network</td>
</tr>
<tr>
<td></td>
<td>August - October</td>
<td>DRY-DOCK</td>
</tr>
<tr>
<td>Leg 187</td>
<td>Oct. - Dec.</td>
<td>Australia-Antarctic Discordance</td>
</tr>
<tr>
<td>Leg 188</td>
<td>Dec. '99 - Feb. '00</td>
<td>Prydz Bay</td>
</tr>
</tbody>
</table>

The following constraints and limitations were noted for certain of these legs:

Leg 184/East Asia Monsoon - contingent on satisfactory site survey data. There is also an issue of research clearance for the two southern sites. TAMU will begin trying to obtain approval immediately, but the possibility exists that the leg may have to proceed without those two sites. This was felt to not seriously impact achievement of the scientific goals.

Leg 188/Prydz Bay - this is PENCILED IN ONLY, and will be contingent on two factors. First, that the W. Antarctic Peninsula leg demonstrates that the scientific objectives can be achieved with the proposed drilling strategy. Second, that the proponents can find a way to make a substantial contribution to the cost of an ice support vessel. It is very unlikely that ODP will be able to cover the full cost of ice support vessels under the current budgetary predictions.
Proponents of proposals scheduled by OPCOM as drilling legs were notified in writing. Proponents of proposals not forwarded to OPCOM received a letter from the SCICOM Chair outlining the committee's comments and recommendations. These proposals will need to be revised for further consideration by the SSEPs, and in order to be sent out again for external evaluation. Proponents of proposals sent forward by SCICOM to OPCOM, but not scheduled as drilling legs, also received a letter from the SCICOM Chair providing an explanation of the decision and recommendations for future action. These proposals will not be sent out for further external evaluation. The SSEPs and SSP will continue to track these proposals through the JOIDES system and they will be re-ranked by SCICOM in August, 1999, along with all other high priority proposals that the SSEPs have recommended to SCICOM.
LEG 184: EAST ASIAN MONSOON HISTORY
### BRIEF DESCRIPTION

The Asian monsoon is a primary component in the global climate system. Monsoon circulation, which is driven by the heating contrasts between the Asian land mass and the Pacific and Indian Oceans, is responsible for a significant portion of inter-hemispheric mass and energy transport, and dominates oceanic and atmospheric interaction in the tropics. The Asian monsoon system has two closely interrelated sub-systems, the South Asian (or Indian) monsoon and the East Asian monsoon. Leg 184 will drill seven sites in the South China Sea to document the evolutionary development and variability of the East Asian monsoon in order to better understand the relationship between mountain uplift, monsoon evolution, and global cooling. The results of this Leg will complement previous ODP drilling in the Arabian Sea (Leg 117), which examined the South Asian monsoon. Knowledge of the Asian Monsoon system, its initiation and evolution, is important not only for understanding of global climate change, but is also of societal and anthropological interest. Monsoon circulation currently affects much of Asia and Africa, an area that is home to two thirds of the world’s present population, and which, in the past, served as the center of hominid evolution and the cradle of civilization. Indeed, it has been suggested that paleo-monsoons may have played significant roles in influencing the history of the human species and the development of ancient cultures.

Monsoon evolution has been influenced several by tectonic factors. First, the collision of India with Asia over the past 60 million years has produced the Himalaya Mountains and the Tibetan Plateau, an uplifted region extending east-west from Europe to southeast Asia. Current models suggest that the eastern part of this system began to rise rapidly about 40 Ma, while the western part rose about 20 Ma. The rapid uplift of the region to its present elevation occurred later, either in the late Miocene (8 Ma ago), or the early Pleistocene (about 2 Ma ago). The Himalaya/Tibetan system has affected global climate by creating a topographic high that has altered atmospheric circulation and heat transfer, leading to the initiation of a monsoon climate over much of Asia and Africa. Although the heating contrast between the largest land mass (Asia) and the largest ocean (Pacific) on Earth generally drives monsoon circulation, the strength of the East Asian monsoon,
especially the summer monsoon, is governed by the high elevation of the Himalayas and the Tibetan plateau.

Uplift of the Himalaya/Tibetan system may also have influenced climate by producing a global reduction of atmospheric CO₂, contributing to global cooling in the Late Cenozoic, and triggering the early Oligocene glaciation of Antarctica (36 Ma). This is because accelerated chemical erosion in the rapidly uplifted region consumed atmospheric CO₂, and increased the delivery of nutrients to the ocean. This, in turn, stimulated oceanic productivity and expansion of the oxygen minimum zone, leading to the enhanced burial and preservation of organic matter, which reduced the replenishment of atmospheric CO₂ from the ocean.

In addition to the uplift of Himalaya/Tibetan system, the late Cenozoic deformation of Asia led to the opening of a series of marginal seas in the northwestern Pacific. These marginal seas influenced Pleistocene climate in ways that are not yet fully understood. Sea level lowering during glacial stages, for example, resulted in the emergence of large shelf areas. During periods of glaciation, the reduction in size of the West Pacific Warm Pool, which is today centered over the most extensive shelf area of the South China Sea, may have profoundly influenced the thermodynamic atmospheric circulation.

Monsoon evolution has also been influenced by the effects of orbital variations on the Earth’s energy balance. The intensity of the summer monsoon is related to oscillations in solar radiation and albedo, which are affected by the obliquity of orbital cycles. The intensity of the East Asian winter monsoon is influenced by the glacial expansion of the ice sheet at high latitudes, and is hence more affected by the precessional cycle.

By investigating the interrelationships between uplift, monsoon evolution, and global cooling, Leg 184 drilling will develop a detailed history of climate change to test the hypotheses that the uplift of Himalaya/Tibetan system may have been responsible for the late Cenozoic global cooling, and for the intensification of the Asian monsoon. Specifically, drilling will provide a continuous marine record of climate history in East Asia which can be compared with (1) terrestrial monsoonal records from China and other parts of East Asia upon which a four stage model of monsoon evolution has been based (Table 5), and (2) the record of the South Asian or Indian monsoon system which was obtained by previous ODP drilling on Leg 117. A comparison of the variability of the two monsoon sub-systems will provide insights into the mechanism of monsoon variations. Leg 184 drilling will also improve our understanding of the stability of the West Pacific Warm Pool, document seasonal changes in tropical marginal sea, and establish a detailed history of sea level changes for the South China Sea.

Leg 184 will provide a better understanding of the interaction between climate and tectonics. This goal is fundamental to understanding earth’s changing climate, the causes and effects of sea-level changes, and studies of global tectonics, all of which have been identified as high-priority scientific objectives in the 1996 ODP Long
Range Plan. The importance of this program is further underscored by the creation of an ODP Program Planning Group (PPG) by the SCICOM to develop drilling strategies specifically aimed at investigating the interaction between climate and tectonics.

**TABLE 5: Evolutionary stages of the East Asian Monsoon based on palynological, mineralogical and geochemical land records from China.**

<table>
<thead>
<tr>
<th>STAGE</th>
<th>TIME INTERVAL</th>
<th>MONSOON</th>
<th>PALEO-GEOGRAPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-monsoonal</td>
<td>Paleocene to Early Eocene</td>
<td>absent or insignificant</td>
<td>smaller Asia without the Tibetan plateau</td>
</tr>
<tr>
<td>Transitional</td>
<td>late Eocene to Oligocene</td>
<td>unstable</td>
<td>India joined with Asia</td>
</tr>
<tr>
<td>Monsoon I</td>
<td>Miocene to Pliocene</td>
<td>summer monsoon developed</td>
<td>plateau uplift started</td>
</tr>
<tr>
<td>Monsoonal II</td>
<td>Late Pliocene to Pleistocene</td>
<td>summer and winter monsoon developed</td>
<td>intensive plateau uplift</td>
</tr>
</tbody>
</table>

**DRILLING PLAN**

Leg 184 will drill seven sites in the South China Sea to study the evolutionary development and variability of the East Asian monsoon. Sites SCS-1 to 5 are located on the northeastern continental slope, southeast of the Dongsha Islands. The five sites will yield a continuous sedimentary sequence, covering successive time intervals since the Oligocene, and providing a high resolution record for the Pleistocene. The cores will permit the comparison of the timing of monsoon events in relation to sedimentation rates and dissolved fluxes associated with the uplift of Himalaya/Tibetan system, dating the proposed stages of the monsoon evolution in East Asia, and will establish Cenozoic climate events. The record will also permit the timing and amplitude of sea level changes in the South China Sea to be assessed.

Two sites will be drilled on the southern continental slope (one of which will be a re-entry site) to the south of the Nansha Islands. This region is characterized by a wide distribution of hemipelagic sediment. The two main sources of terrigenous deposits are the Mekong River and the paleo-Sunda River.
TABLE 6: Site locations for Leg 185

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Latitude (°N)</th>
<th>Longitude (°E)</th>
<th>Water Depth (m)</th>
<th>Sediment (m)</th>
<th>Basement (m)</th>
<th>Total mbsf (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCS-1</td>
<td>20°3.16’</td>
<td>117°25.16’</td>
<td>2050</td>
<td>450</td>
<td>0</td>
<td>450</td>
</tr>
<tr>
<td>SCS-2</td>
<td>19°35.00’</td>
<td>117°37.88’</td>
<td>3190</td>
<td>400</td>
<td>0</td>
<td>400</td>
</tr>
<tr>
<td>SCS-3</td>
<td>20°17.96’</td>
<td>115°47.32’</td>
<td>625</td>
<td>550</td>
<td>0</td>
<td>550</td>
</tr>
<tr>
<td>SCS-4</td>
<td>19°27.24’</td>
<td>116°15.85’</td>
<td>2093</td>
<td>520</td>
<td>0</td>
<td>520</td>
</tr>
<tr>
<td>SCS-5</td>
<td>18°56.96’</td>
<td>116°29.63’</td>
<td>3080</td>
<td>720</td>
<td>0</td>
<td>720</td>
</tr>
<tr>
<td>SCS-6</td>
<td>6°38.82’</td>
<td>111°52.30’</td>
<td>1935</td>
<td>625</td>
<td>0</td>
<td>625</td>
</tr>
<tr>
<td>SCS-7</td>
<td>6°22.46’</td>
<td>111°49.11’</td>
<td>1813</td>
<td>1200</td>
<td>0</td>
<td>1200</td>
</tr>
</tbody>
</table>

NOTE: Potential clearance problems exist for Leg 184 in connection with the People’s Republic of China’s claim to most of the South China Sea south of about 18° N. This affects sites SC-6 and SC-7, located near the Spratley Islands. In addition to China, a number of other nations claim the Spratley Islands. The sites in the northern South China Sea are under Chinese jurisdiction, thus clearance problems are not anticipated. If clearance cannot be obtained for the southern sites, they will not be drilled. SCICOM is of the opinion that drilling the northern sites alone is high priority science, and that the objectives of the Leg will not be compromised by the elimination of the southern sites.

LOGGING PROGRAM

In addition to the standard set of logging tools, the Well Seismic Tool (WST) and GHMT, the typical additional suite for paleoceanographic legs, will be deployed. The primary value of the GHMT is for filling gaps in information when there is partial recovery. The single component VSP is required for the deeper sites, and at two or three of the northern sites.
LEG 185: MARIANA - IZU CONVERGENT MARGIN
## LEG 185

**Proposal**: 472-Rev2  
**Title**: Crustal Fluxes and Mass Balances at the Marian-Izu Convergent Margin  

### BRIEF DESCRIPTION

Mantle dynamics drive plate tectonics and the solid Earth geochemical cycle, resulting in crustal formation and destruction at plate boundaries. Along subduction zones at convergent margins, crustal growth occurs by the accretion of island arcs and magmatic additions at arcs. Crustal destruction takes place by the subduction of marine sediments and basaltic crust at oceanic trenches. In this process, crustal material is recycled to various levels deep in Earth's interior, where it ultimately mixes with mantle materials. Some of this material returns to the shallow crust, or the arc crust, during fore-arc accretion and dewatering, or volcanism, respectively. Some is mixed back into the deep mantle, and some may re-emerge in mantle plumes. The geochemical and physical evolution of Earth's crust and mantle depends in large part on the different ways by which crustal recycling occurs and the fate of subducted material at convergent margins.

Leg 185 will investigate the solid Earth geochemical cycle by determining the net fluxes of material at the Mariana-Izu subduction zone by mass balance of the inputs (sediment and basaltic portions of the incoming plate) and outputs (sediment and fluid fluxes to the fore-arc crust and mantle, and crustal components recycled to the volcanic arc and back-arc). The Mariana-Izu margin is considered the best setting in which to address the problem of crustal recycling because the processes at work are less complex than at other convergent margins. For example, sediment accretion does not occur in the fore-arc, so all of the incoming sediment is believed to be subducted. Furthermore, the crustal output part of the equation is simplified since both island arcs are built on oceanic crust, thereby reducing upper plate contamination to a minimum.

Previous drilling has already provided information about many parts of the crustal flux equation at the Izu and Mariana margins. Leg 125 drilled fore-arc sites (serpentine seamounts), permitting the study of fluid outflow. Most of the sedimentary components being subducted at the Mariana trench were sampled by Leg 129 drilling at Sites 800 to 802 (Mariana and Pigafetta basins). In addition, the volcanic arcs and back-arcs are among the best characterized from intra-oceanic convergent margins. The missing part of the flux equation is largely the input: 1) both the incoming
sediment and basaltic sections approaching the Izu-Bonin trench, and 2) the altered oceanic crust seaward of the Mariana trench.

Leg 185 drilling will sample the remaining components of the flux equation at the Mariana-Izu Convergent Margin by deepening ODP Hole 801C, the oldest in situ oceanic crust drilled, to provide estimates for the oceanic crust input to the Mariana trench, and by drilling at Site BON-8A, to characterize the crustal section being subducted at the Izu-Bonin trench. Drilling through sediments and altered oceanic crust at Site BON-8 and 801C will not only constrain the crustal input, but also test whether the along-strike variations observed in the volcanics can be explained by regional along-strike variations in the subducted crustal inputs. Better constraints on the input and output budgets in subduction zones are essential for model calculations of global geochemical fluxes, and have major implications for the study of mantle dynamics, arc magmatism, and magmatic petrology (especially the alteration of oceanic crust). Finally, by drilling deeply into basement, Site BON-8A and Hole 801C will serve as the first available reference sites for the structure and composition of old (Pacific) fast spreading oceanic crust that has experienced the net effect of aging and alteration and which constitutes a major component to global budgets at convergent margins.

Understanding physical and chemical processes during crustal formation and destruction at convergent margins is fundamental to studies of global tectonics, magmatism and geochemistry. This theme has been identified as a high-priority scientific objective by COSOD II and the 1996 ODP Long Range Plan. In particular, the quantification of global geochemical cycles and mass balances at subduction zones, is recognized as being of first-order importance to the scientific communities represented by geoscience programs such as the MARGINS Initiative.

**DRILLING STRATEGY**

In order to provide critical information on the crustal inputs to the subduction zone, two sites will be drilled: one seaward of the Marianas trench (801C) and one seaward of the Bonin trench (BON-8A).

**TABLE 7: Site locations for Leg 185**

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Water Depth (m)</th>
<th>Sediment (m)</th>
<th>Basement (m)</th>
<th>Total mbsf (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hole 801C</td>
<td>18°38.5'N</td>
<td>156°21.6'E</td>
<td>5674</td>
<td>460</td>
<td>350</td>
<td>950</td>
</tr>
<tr>
<td>BON-8A</td>
<td>31°18.5'N</td>
<td>142°57.5'E</td>
<td>6000</td>
<td>600</td>
<td>300</td>
<td>900</td>
</tr>
</tbody>
</table>
Hole 801C was drilled previously in the Pigafetta basin seaward of the Marianas trench, on Leg 129. The hole was left clean with a re-entry cone, and is cased and cemented into basement. Although this site is about 800 km from the Marianas trench, it is the ideal site to sample altered, "normal" oceanic crust, the primary missing component of the recycling equation in this area. More importantly, it is the oldest in situ oceanic crust that has been drilled to date, and as such, a critical end-member in crustal aging studies.

Leg 185 will deepen Hole 801C by 350 m to ~ 940 mbsf, or ~480 meter sub-basement, to (1) characterize the geochemical fluxes and geophysical aging attending the upper oxidative alteration of the oceanic crust at Hole 801C; (2) use these estimates for crustal recycling mass balances; (3) compare igneous compositions, structure and alteration with other drilled sections of in situ oceanic crust (in particular Hole 504B), contrasting a young site in Pacific crust (6 Ma) with the oldest site in Pacific crust (165 Ma); and (4) help constrain general models for seafloor alteration that depend on spreading rate and age.

Hole 801C is located in an area of very low amplitude magnetic anomalies, usually called the Jurassic Magnetic "Quiet" Zone (JQZ). Deepening Hole 801C will permit hypotheses that attempt to explain the occurrence of the JQZ to be tested.

Site BON-8A, located ~ 60 km seaward of the Izu trench, will provide the first complete section of sediment and altered oceanic crust entering this subduction zone. The scientific objectives are to (1) provide estimates of the sediment inputs (geochemical fluxes) into the Izu subduction zone; (2) provide estimates of the altered basalt inputs (geochemical fluxes) into the Izu subduction zone; (3) contrast crustal budgets here with those seaward of the Marianas, in order to test whether along-strike differences in crustal inputs can explain the geochemical differences in volcanics from the two arc systems; and (4) compare alteration characteristics with those at Hole 801C.

In addition to serving as an important reference site for crustal inputs to the Bonin trench, Site BON-8A will also address important paleomagnetic and paleoceanographic problems. Site BON-8A is located approximately on magnetic anomaly M12. According to recent time scale calibrations, basement age should be about 135 Ma and correspond to the Valanginian Stage of the Early Cretaceous. Drilling at Site BON-8A will obtain good biostratigraphic control to permit the validity of these basement age estimates to be tested. Proposed CCD variations will also be studied at Site BON-8A, which has an Early Cretaceous basement age, an equatorial paleo-latitude history during the mid-Cretaceous (especially from 115-95 Ma), and a predictable subsidence history for the Cretaceous.

Drilling at both Hole 801C and Site BON-8A will require a total drillstring length of up to 6,900 m, which approaches the maximum capabilities of the JOIDES Resolution. The maximum length of drill string that can be supported by the JOIDES Resolution in STATIC conditions is 9,144 m. However, the load bearing capacity of the derrick,
rated at 1.2 million pounds (600 short tons), must be reduced when the ship rolls and pitches, so that the practical limit to the length of the drill string that can be deployed is in the range of 7 to 8 km. The greatest length of drill string ever deployed by ODP was 6,919 m in Hole 765D in the Argo Abyssal plain, NE Australia, on Leg 123 in 1988. Leg 185 has been scheduled to avoid inclement weather (typhoons) in order to optimize conditions for drilling.

The estimated drilling time at BON-8A is 28 days (sediments = 5 days, 300 m of basalt at 50m/bit/3 days = 18 days, logging = 5 days), and at Hole 801C is 26 days (350 m of basalt at 50m/bit/3 days = 21 days, logging = 5 days).

LOGGING PROGRAM

Hole 801C was re-entered on ODP Leg 144 and downhole measurements were conducted in order to begin characterizing typical old oceanic crust generated at a fast spreading rate. The geophysical logging results revealed the layered structure of the uppermost oceanic crust within Hole 801C in considerable detail, and provided new information about old oceanic crustal structure. Deepening Hole 801C will permit additional downhole measurements to be conducted in order to fully characterize the petrology, hydrogeology, structure and physical properties of the oceanic crust. Special deployments at Hole 801C and Site BON-8A will include the Azimuthal Resistivity Imager (ARI) and the Geochemical Logging Tool (GLT).
LEG 186: WESTERN PACIFIC GEOPHYSICAL NETWORK - JAPAN TRENCH SITES

LEG 186
Proposal 431
Title Western Pacific Geophysical Network: Subducting Plates into Mantle - Japan Trench Sites

BRIEF DESCRIPTION

The Western Pacific is the best suited region on earth to address the dynamics of the subducting plates, their relation to mantle convection, and associated earthquake events. Indeed, most of the world’s great earthquakes occur along subducting plate boundaries and most tsunamis result from earthquakes within subduction zones. Earthquakes may be classified into several different types, including: ordinary earthquakes, which are produced by fast ruptures and are accompanied by the sudden release of stored elastic strain energy; slow earthquakes, which rupture more slowly in comparison to ordinary earthquakes; and silent earthquakes, which are difficult to detect because they are not accompanied by high-speed rupture propagation events, and thus do not generate high frequency waves. Although both
slow earthquakes and silent earthquakes are hard to record, they can be measured by strainmeters and digital, broadband seismometers.

Leg 186 will drill two boreholes at Sites JT-1A and JT-2A, located on the sea-floor in the accretionary wedge near the Japan trench, to serve as long-term geophysical observatories. An expanding land-based geophysical network exists in the western Pacific region, and Japan is densely networked with seismic stations that detect ordinary earthquakes. As a consequence, the Japan Trench is the world's best studied subduction zone. In the Japan trench subduction zone off Sanriku and Tohoku, however, only about 25% of the Pacific plate motion can be explained by ordinary earthquakes. This observation suggests that as much as 75% of the Pacific plate motion in the subduction zone may be linked to slow earthquakes which are not recorded on normal seismographs located on land. Thus, crucial field data from slow earthquakes are needed to quantify elastic and inelastic behaviors at this active plate boundary, and to better understand the connection between plate subduction from the trench to the deep mantle. To this end, the JT-1A and JT-2A borehole observatories will be instrumented with broadband seismographs and strainmeters. The data acquired will provide information about subduction zone earthquakes, particularly, tsumanigenic and slow earthquakes, as well as the seismicity of the Japan forearc and wave propagation effects in the subducting slab.

Leg 186 is of great societal relevance because the Japan trench is close to major population centers that are threatened by both tsunamis and direct earthquake actions. Understanding the mechanics of the subduction process in this area will significantly improve knowledge of earthquake mechanisms in general, and can potentially be used to obtain more reliable assessments of damage from earthquakes. In addition, this program is directly relevant to two special initiatives of the 1996 ODP Long Range Plan, "In situ monitoring" and "Exploring the Deep Structure of Continental Margins". The results will be of interest to such other global geoscience programs as ION, OSN, BOREHOLE, SEIZE, IRIS, VENUS, and DEOS.

**DRILLING STRATEGY AND INSTRUMENT PACKAGE INSTALLATION**

Leg 186 will drill two boreholes at Sites JT-1A and JT-2A, located on the sea-floor in the accretionary wedge near the Japan trench, to serve as long-term geophysical observatories. These boreholes are essentially vaults within Earth's crust with adequate stability to house the delicate instruments required for the collection of measurements to test models of the subduction process, determine the nature of tsunami earthquakes, and generate higher resolution images of the subducting plate.
TABLE 8: Site locations for Leg 186

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Latitude (°N)</th>
<th>Longitude (°E)</th>
<th>Water Depth (m)</th>
<th>Sediment (m)</th>
<th>Basement (m)</th>
<th>Total mbsf (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>JT-1A</td>
<td>39°10.88'</td>
<td>143°20.43'</td>
<td>2700</td>
<td>1200</td>
<td>100</td>
<td>1300</td>
</tr>
<tr>
<td>JT-2A</td>
<td>38°43.31'</td>
<td>143°20.85'</td>
<td>2123</td>
<td>1250</td>
<td>100</td>
<td>1350</td>
</tr>
</tbody>
</table>

It will be necessary to restrict the flow of seawater, which is a source of seismic noise, into the boreholes at both JT-1A and JT-2A. Thus, they will be triple cased through more than 1200 m of sediment to the total depth below the seafloor in basement and sealed at the bottom. This will require about 21 days for each site, and will serve to test the JOIDES Resolution’s Dril-Quip system to a greater extent than any previous drilling. The installation of the instruments will follow drilling by about three months and will be carried out by Japanese scientists. For this purpose, re-entry cones will be left in place to permit installation from a wireline re-entry system using either a manned-submersible or ROV (Kaiko 10K or Dolphin 3K), and to facilitate future servicing of the instruments.

The development and testing of the instruments to be deployed in the boreholes at JT-1A and JT-2A, installation methods, data recovery and power supply systems commenced in 1995 under the sponsorship of three Japanese national scientific programs. Of particular importance are the strainmeters which will be used to detect slow and silent earthquakes. Under development is a modified Sacks-Evertson strainmeter capable of measuring 1/100 of a nanostrain, or a change of 1 micron of strain over one kilometer. Additional instruments include broadband seismometers; pressure sensors designed to obtain measurements at the seafloor and at the base of the borehole; two-component tiltmeters to measure crustal deformation to understand the elastic response of the plate as well as its permanent internal deformation; and temperature sensors to obtain vertical temperature profiles in the hole. Permanent undersea fiber optic cables have already been laid between Japan and the locations on the seafloor for JT-1A and JT-2A, in order to permit real-time data recovery, to supply power, and for constant monitoring of the instrument functions.

LOGGING PROGRAM

A suite of downhole measurements will provide information about fluid pressure and permeability, stress orientation and magnitude, and physical properties. The Borehole Televiewer and the Azimuthal Resistivity Imager will be deployed on Leg 186. The Geochemical Tool and the VSP are not primary requirements, but are enhancements.
LEG 187: AUSTRALIA-ANTARCTIC DISCORDANCE
LEG 187

AUSTRALIA-ANTARCTIC DISCORDANCE

Proposal 426-Rev3

Title Mantle reservoirs and mantle migration associated with Australian-Antarctic rifting

Proponents D. Christie, D. Pyle, A. Crawford, & B.P West

BRIEF DESCRIPTION

Leg 187 will investigate relationships among ocean crustal composition, mantle composition, spreading and magma supply rates at the Australian Antarctic Discordance (AAD). The AAD, centered on the Southeast Indian Ridge between Australia and Antarctica, is an anomalous deep (4-5 km) region within the global mid-ocean ridge spreading system. The AAD is underlain by unusually cold mantle, and its eastern boundary coincides with an abrupt change from smooth axial ridge morphology and abyssal topography (characteristics usually associated with fast-spreading centers) to deep axial valleys and rough topography (characteristics usually associated with slow spreading). The AAD is also characterized by a pattern of short axial segments separated by long transforms with alternating offset directions, low gravity signal, high upper mantle seismic wave velocities, and an intermittent asymmetric spreading history. The regional context for Leg 187 drilling has been almost completely characterized as a consequence of mapping and sampling cruises carried out in 1995 and 1996. These cruises have provided almost complete coverage of over 3,000 km along the South East Indian Ridge (SEIR) to the west of the AAD, a region that was previously almost completely unknown.

Multiple episodes of ridge propagation towards the AAD have occurred along the SEIR, suggesting that upper mantle may be converging towards this region. Dredging along the axis of spreading has revealed that close to the eastern boundary of the AAD, there is a distinct discontinuity in the isotopic signatures of axial lavas marking the boundary between 'Indian' and 'Pacific' MORB mantle provinces. This unusually sharp geochemical boundary is one of the unique features of the AAD and is indicative of profound differences in magma supply. The relationship of the Indian-Pacific isotopic boundary to the geophysical, morphological and petrological features of the AAD is unclear. Limited evidence suggests that the isotopic boundary, which can be located to within 25 km along the spreading axis, has been migrating westward for approximately 40 Ma, since the final rifting of the South Tasman Rise from Antarctica first allowed upper mantle flow from the Pacific to the Indian Oceans, and that it has only recently arrived beneath the AAD. Indeed, recently-acquired geochemical suggest that, during the last 4 Ma, the boundary has migrated rapidly westwards across the easternmost segment of the AAD at a rate of 25-40 mm/yr. An alternate hypothesis is that the isotopic boundary is genetically linked to the same
anomalous mantle processes that have been responsible for the existence of the AAD throughout the 90 Ma since Australia and Antarctica first rifted apart.

The primary objectives of Leg 187, to identify the Indian-Pacific isotopic boundary and to determine its configuration out to at least 30 Ma, will be addressed through a systematic off-axis sampling program. Additional geophysical objectives will focus mainly on understanding the mantle dynamics of the region, and their relation to the anomalous processes within the AAD. Identification of the off-axis position of the isotope boundary will permit the refinement of 3-D mantle flow models, providing more precise constraints on mantle dynamics, including interactions among mantle temperature gradients, viscosity, flow velocities and flow patterns throughout the region. Investigating the origins of the AAD and the Indian-Pacific isotopic boundary will also yield data that will be important in addressing problems beyond the immediate region. Thus, the results of the Leg will both enhance knowledge of the dynamic behavior and composition of the upper mantle at the AAD, and contribute to a broader understanding of the oceanic mantle in general. The fundamental problems of global mantle dynamics and mantle composition are identified high priority themes of the 1996 ODP Long Range Plan under the core theme, “Exploring the Transfer of Heat and Material to and from Earth’s Interior”. The goals of Leg 187 are also linked to the InterRIDGE program, which has targeted the Southeast and Southwest Indian Ridges (SEIR/SWIR) for special study.

**DRILLING PLAN**

The configuration of the Indian-Pacific isotopic boundary will be determined by a well-planned inventory of the chemical and isotopic compositions of basalts, and hence of inferred mantle compositions, both on and off axis to the north and east of the AAD. The near-axis (0-5 Ma) component of this sampling strategy, carried out during 1996, identified the trace of a migrating boundary within the AAD from 0-4 Ma. Leg 187 will extend the program of sampling to older crust by drilling approximately eight to ten single-bit holes 50-100 meters into igneous basement, primarily along two isochrons (15 and 30 Ma). The eighteen potential sites intended to cover the range of possible locations of the isotopic boundary, which have been approved for drilling by SSP and PPSP, are shown in Table 9. The goal is not to drill all sites, but to allow the drilling program to respond to chemical data from each hole as it is drilled. ICP-MS analyses of previously collected samples, show that, compared to Indian-type samples, Pacific-type samples from this region are (with rare exceptions) markedly depleted in Ba relative to other highly incompatible trace elements. Thus, ratios such as Ba/Rb, Ba/Nb and Ba/Zr, if precisely measured, will accurately reflect source differences (Indian vs. Pacific mantle). A DCP plasma spectrometer (for the measurement of Ba/Zr and Ba/Rb) will be installed on board the JOIDES Resolution and used in conjunction with the shipboard AA instrument (Ba and Rb measurements) to determine, within a few hours, whether recovered basalts are of 'Indian' or 'Pacific' origin. This reactive drilling strategy will guide the selection of sites to be drilled during the cruise. The array of drill sites has been designed to cover
possible configurations of the isotopic boundary and to distinguish between the competing hypotheses concerning the nature and extent of mantle migration.

### TABLE 9: Approved site locations for Leg 187

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Water Depth (m)</th>
<th>Sediment (m)</th>
<th>Basement (m)</th>
<th>Total mbsf (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AAD-1B</td>
<td>46°20.6' N</td>
<td>134°59.8' E</td>
<td>4200</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-2B</td>
<td>45°57.4'S</td>
<td>130°00.0' E</td>
<td>4500</td>
<td>150-250</td>
<td>50</td>
<td>200-300</td>
</tr>
<tr>
<td>AAD-3B</td>
<td>44°25.5'S</td>
<td>126°54.5' E</td>
<td>4350</td>
<td>150-250</td>
<td>50</td>
<td>200-300</td>
</tr>
<tr>
<td>AAD-4C</td>
<td>47°32.7'S</td>
<td>130°00.0'E</td>
<td>4050</td>
<td>150</td>
<td>50</td>
<td>200</td>
</tr>
<tr>
<td>AAD-8C</td>
<td>41°16.3'S</td>
<td>129°48.9'E</td>
<td>5550</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>AAD-13B</td>
<td>45°01.2'S</td>
<td>135°00.2'E</td>
<td>4575</td>
<td>200</td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td>AAD-14C</td>
<td>44°01.3'S</td>
<td>134°59.9'E</td>
<td>4700</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
<tr>
<td>AAD-16</td>
<td>41°28.4'S</td>
<td>131°19.5'E</td>
<td>5700</td>
<td>200</td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td>AAD-20</td>
<td>45°45.2'S</td>
<td>134°59.9'E</td>
<td>4275</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-21</td>
<td>45°27.9'S</td>
<td>134°59.9'E</td>
<td>4575</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-23</td>
<td>42°33.1'9'S</td>
<td>135°00.1'E</td>
<td>4950</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-27</td>
<td>41°18.6'S</td>
<td>127°57.1'E</td>
<td>5100</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-28</td>
<td>43°15.3'S</td>
<td>128°52.1'E</td>
<td>5100</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-29</td>
<td>43°56.9'S</td>
<td>128°49.7'E</td>
<td>5100</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-33</td>
<td>43°44.9'S</td>
<td>127°44.9'E</td>
<td>4800</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-34</td>
<td>42°44.2'S</td>
<td>127°53.2'E</td>
<td>4875</td>
<td>100-200</td>
<td>50</td>
<td>150-250</td>
</tr>
<tr>
<td>AAD-35</td>
<td>41°57.5'S</td>
<td>127°59.7'E</td>
<td>5000</td>
<td>200</td>
<td>50</td>
<td>250</td>
</tr>
<tr>
<td>AAD-36</td>
<td>41°52.7'S</td>
<td>127°00.1'E</td>
<td>5000</td>
<td>100</td>
<td>50</td>
<td>150</td>
</tr>
</tbody>
</table>

**LOGGING PROGRAM**

The logging program has not yet been determined, but is under discussion with WLS/LDEO.
The Antarctic ice sheet is a key component of the world's climatic system and has a major influence on global sea levels. At present, knowledge of the history of the Antarctic ice sheet is fragmentary making it impossible to predict whether the present ice sheet will grow or diminish with global warming. A precise date for the onset of Antarctic glaciation has not yet been determined, and there is much controversy over the stability of the East Antarctic ice sheet, particularly during the Pliocene. In order to gain a better understanding of role of the Antarctic ice sheet in global climate change and to test models of ice sheet behavior, knowledge of the linkages between the behavior of the Southern Ocean, the ice sheet and the atmosphere is essential. To this end, ODP plans to conduct a series of Antarctic drilling legs based on a multi-leg approach developed by the ODP Antarctic Detailed Planning Group in 1996.

Leg 188, the second leg in this multi-leg approach, will drill Cenozoic sedimentary sequences in Prydz Bay, Antarctica, and on the adjacent continental slope and rise, known as the Cooperation Sea, to obtain a detailed history of ice sheet growth and decay, and Southern Ocean climate. Specifically, Leg 188 aims to (1) link events in the East Antarctic Ice Sheet with changes in the Southern Ocean by drilling sediment drifts on the continental rise equivalent to the Prydz Bay continental slope, particularly the Prydz Channel trough mouth fan; (2) recover a record of Plio-Pleistocene ice advances and interglacial deposits from the Antarctic continental slope by penetrating sequences in other trough mouth fans built by advances of the Lambert Glacier-Amery Ice Shelf; (3) date the earliest evidence of glacial activity in Prydz Bay; and (4) obtain information about the Paleogene environment of Antarctica.

Prydz Bay is located on the East Antarctic coast. A fault-bounded structure, the Lambert Graben, extends inland from Prydz Bay to the Prince Charles Mountains and is occupied by the Amery Ice Shelf-Lambert Glacier ice drainage system, which drains about 22% of the East Antarctic ice sheet. Included in its drainage basin are the Gamburtsev Subglacial Highlands, which may have been the nucleus of the earliest Antarctic glaciation. It is postulated that Lambert Graben may contain the earliest Cenozoic glacial sediments. The Lambert Glacier responds to fluctuations of the interior of the East Antarctic Ice-sheet which are reflected in the sediments and sedimentary rocks of Prydz Bay. During Cenozoic glacial episodes, the Lambert
Glacier advanced to the shelf edge, extending it by progradation, and then constructing a large trough mouth fan on the continental slope on the western side of Prydz Bay. This and other trough mouth fans built on the continental slope by large ice streams may contain the most complete records of glacial history of any sedimentary sequences on the east Antarctic margin. The continental rise adjacent to Prydz Bay is characterized by large sediment drifts which were deposited by turbidity currents from the continental shelf, and deep currents in the Southern Ocean. Seismic horizons can be mapped from the slope to the rise allowing the relationships between slope and rise deposition to be determined. Drilling these sediment drifts will yield a high resolution picture of changes in paleoceanography that can be correlated with changes in East Antarctic Ice Sheet, and complement the ODP data base from other parts of the world (ODP Legs 155, 162, and 172).

Leg 188 is planned as a sequel to Leg 178, which will drill on the Pacific margin of Antarctica in early 1998. **ODP will proceed with Leg 188 only if the results of Leg 178 demonstrate that the strategy of drilling sediments drifts and progradational wedges yields the records necessary for studying the history of Antarctic glaciation, and if funding to support part of the cost of an ice support vessel can be found from sources other than ODP.** If Leg 188 proceeds as planned, the results will provide a significant contribution to Initiative 1 of the ODP Long Range Plan, Understanding Natural Climate Variability and Rapid Climate Change, and two sub-themes under the major research themes of the Dynamics of Earth’s Environment: Understanding Earth’s Changing Climate, and the Causes and Effects of Sea-Level Change. The goals of ODP Leg 188 are linked to those of ANTOSTRAT, which was set up in 1989 by SCAR (Scientific Committee On Antarctic Research) to study Antarctic Cenozoic glacial history from sediments on the Antarctic continental margin. The results of Leg 188 will also complement the Cape Roberts Project, a joint venture involving scientists from Germany, Italy, New Zealand, the UK and the US, which seeks to recover cores from a 1500 m thick sedimentary sequence off Cape Roberts in the southwestern Ross Sea.

**DRILLING PLAN**

Leg 188 will drill a transect of holes from the continental rise into Prydz Bay to provide insights into the behavior of the East Antarctic Ice Sheet and its interaction with the Southern Ocean. The Prydz Bay continental slope and rise are underlain by thick (over 6,000 m) post-early Cretaceous sediments. A major seismic unconformity within these sediments separates a lower homogeneous part of the section from an upper, heterogeneous one characterized by a variety of well-stratified seismic facies. Thick, prograding foresets were produced above this unconformity right across Prydz Bay, commencing in late Oligocene times. This transition possibly corresponds to the time when the grounded ice sheet started to carry large amounts of glacial sediments to the shelf edge, which were redistributed by slope processes. Another major unconformity rests above the first and represents the base of deposits containing abundant, well stratified sediment drift facies. Sediment drifts in Prydz Bay are elongated ridges aligned along the margins of deep channels, others have no clear
correlation with channels but all of them are elongate approximately orthogonal to the continental margin. The features and seismic pattern of sediment drift suggest that they have been deposited as a result of the interaction of downslope mass flow and strong bottom, contour currents. Leg 188 will also drill in the Prydz Channel, a transverse channel that cuts across Prydz Bay. Such channels are underlain by thinner topset sediments than other parts of the shelf as a consequence of having being excavated by fast flowing ice streams. Thus, by drilling through them, access to older sedimentary sections is possible.

TABLE 10: Proposed site locations for Leg 188

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Latitude</th>
<th>Longitude</th>
<th>Water Depth (m)</th>
<th>Sediment (m)</th>
<th>Basement (m)</th>
<th>Total mb (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PBF2</td>
<td>66°30.8'S</td>
<td>71°41.3'E</td>
<td>1312</td>
<td>550</td>
<td>0</td>
<td>550</td>
</tr>
<tr>
<td>PBD2A</td>
<td>66°20.2'S</td>
<td>71°40.4'E</td>
<td>2010</td>
<td>720</td>
<td>0</td>
<td>720</td>
</tr>
<tr>
<td>PBF1A</td>
<td>66°23.3'S</td>
<td>71°38.3'E</td>
<td>1890</td>
<td>730</td>
<td>0</td>
<td>730</td>
</tr>
<tr>
<td>PBF4</td>
<td>65°49.2'S</td>
<td>74°30.9'E</td>
<td>2745</td>
<td>934</td>
<td>0</td>
<td>934</td>
</tr>
<tr>
<td>PBD2</td>
<td>64°36.2'S</td>
<td>69°20.4'E</td>
<td>3075</td>
<td>1100</td>
<td>0</td>
<td>1100</td>
</tr>
<tr>
<td>PBD2A</td>
<td>64°33.6'S</td>
<td>68°44.3'E</td>
<td>3262</td>
<td>1500</td>
<td>0</td>
<td>1500</td>
</tr>
</tbody>
</table>

LOGGING PROGRAM

In addition to the standard set of logging tools, the Well Seismic Tool (WST) and GHMT, the typical additional suite for paleoceanographic legs, will be deployed. The primary value of the GHMT is for filling gaps in information when there is partial recovery. The single component VSP is required for the deeper sites, and at two or three of the northern sites.
5.2 FY 1999 BUDGET

Action Sought:

EXCOM is asked to review and comment on the preliminary FY 1999 budget, and decide if a BCOM should meet this year.

Background:

BCOM Members are: J. Orcutt (Chair), H. Beiersdorf, R. Detrick, J. Pearce, S. Humphris. Representatives of JOI, NSF, WLS/LDEO, and ODP/TAMU attend BCOM meetings.

In 1997 a BCOM was in place, but did not meet, because the FY 1998 budget was sufficiently developed by the time of the February EXCOM meeting that EXCOM was able to give JOI the authority to finalize the budget. The FY 1998 budget was formally adopted at the June EXCOM meeting when EXCOM approved the FY 1998 ODP Program Plan.

A summary of the SCICOM and OPCOM discussions regarding the FY'99 budget are included here as background.

Overview of the Draft FY 1999 Budget Discussions from the August 1997 SCICOM and OPCOM Meetings.

SCICOM: SCICOM provided OPCOM with a prioritization by groupings of non-leg related items to which the committee referred when considering leg-related expenses for the FY 99 budget. Items included in this prioritization were contained in a draft budget for non leg-related X-based items for FY '98 and '99 presented to SCICOM by ODP Director, Dave Falvey. Items included the Microbiology Facility and the XRD, which was in the SCIMP priority list. SCICOM added the Downhole Measurements Lab (~$400K) to the list and recommended a lower priority for the Data Migration Project.
By consensus, SCICOM agreed on the following prioritized list of high-priced (> $100K), non-leg related items:

<table>
<thead>
<tr>
<th>Priority</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hard rock coring</td>
</tr>
<tr>
<td>1</td>
<td>Deep Drilling</td>
</tr>
<tr>
<td>2</td>
<td>Downhole lab</td>
</tr>
<tr>
<td>3</td>
<td>XRD</td>
</tr>
<tr>
<td>4</td>
<td>Data Migration</td>
</tr>
<tr>
<td>5</td>
<td>Microbiological Facility</td>
</tr>
</tbody>
</table>

(*) - This item is last to indicate that it will be approached through a strategy other than building a permanent shipboard facility. It does not indicate the priority of the project as a whole.

The other items are grouped as follows:

High Priority (in no particular order):
- CLIP-II
- CORESEIS
- Borehole Stability Project
- Sampling Parties

Medium-Low Priority:
- FMS Atlas

Low Priority (in no particular order):
- P-Code Receivers
- Technical Support (this is low due to the commitment by ESF to provide this support outside of the ODP budget).

OPCOM: Falvey presented an overview of FY’99 Draft X-Base Program Budget to OPCOM with Leg-related costs estimated to be.

<table>
<thead>
<tr>
<th>LDEO</th>
<th>TAMU</th>
</tr>
</thead>
<tbody>
<tr>
<td>$479K</td>
<td>$1.1M</td>
</tr>
</tbody>
</table>

OPCOM determined that the FY’99 schedule is one of the cheapest to date with the total cost of leg enhancements equaling $1.392 million; additional costs for other X-Base items amount to $2.3 million bringing the total to $3.692 million (revised to $3.8 million at OPCOM). Since the projected allocation for the FY’99 X-base budget was $3.13 million, the projected allocation is about $600K (revised to $700K at OPCOM) short.

This realization that the projected allocation for the X-Base budget was about $600K - $700K short prompted OPCOM to review SCICOM’s prioritized list of non-Leg X-Base items (above). As a consequence of this exercise, the Microbiology Facility and the FMS Atlas were moved to the bottom of the prioritized list. Goldberg will explore options for industry funding of the FMS Atlas.
OPCOM noted that not only is cutting the big ticket items potentially deleterious to the Program; shaving small items ($20 to $40 K items) off at the margin may also endanger the scientific objectives of a Leg.

**Recommendations of Priorities for the X-Base Budget (as revised during the OPCOM Meeting)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999 Dry-Dock</td>
<td>310</td>
</tr>
<tr>
<td>PEC-V</td>
<td>50</td>
</tr>
<tr>
<td>WWW Publishing</td>
<td>75</td>
</tr>
<tr>
<td>Publications</td>
<td>205</td>
</tr>
<tr>
<td>TAMU-Leg-Based</td>
<td>900</td>
</tr>
<tr>
<td>Technical Support*</td>
<td>40</td>
</tr>
<tr>
<td>LDEO Leg-Based</td>
<td>450</td>
</tr>
<tr>
<td>Hardrock Coring</td>
<td>400</td>
</tr>
<tr>
<td>Deep Drilling</td>
<td>100</td>
</tr>
<tr>
<td>Downhole Lab</td>
<td>400</td>
</tr>
<tr>
<td>CLIP II</td>
<td>60</td>
</tr>
<tr>
<td>Sampling parties</td>
<td>40</td>
</tr>
<tr>
<td>CoreSeis/Borehole Stability</td>
<td>40</td>
</tr>
<tr>
<td>XRD</td>
<td>150</td>
</tr>
<tr>
<td>Data Migration</td>
<td>330</td>
</tr>
<tr>
<td>LDEO EXTRA Leg-Based</td>
<td>18</td>
</tr>
<tr>
<td>P-Code Receivers</td>
<td>30</td>
</tr>
<tr>
<td>FMS Atlas</td>
<td>50</td>
</tr>
<tr>
<td><strong>Microbiology Facility</strong></td>
<td>400</td>
</tr>
</tbody>
</table>

At the time of the OPCOM Meeting, the projected X-Base budget was $3.1 million. Large uncertainties regarding the impact of the day rate of the JOIDES Resolution, the new Chinese associate membership, and the potential Japanese contribution to technology development made further development of the FY 99 budget impractical. SCICOM's prioritized list, as modified by OPCOM (above), was given as advice to JOI as to the priorities for the Program. Once a more detailed budget is developed, it will be provided to SCICOM for their consideration at their April 1998 meeting.

**A PRELIMINARY DRAFT FY 1999 BUDGET WILL BE PRESENTED BY NICK PISIAS AT THE EXCOM MEETING.**
6.1 PHASE III BUDGET PROJECTIONS. HOW BIG IS THE PROBLEM?

Here we present a summary of the impact of inflation and day rate increases resulting from the re-negotiations of the ODL contract on Phase III budgets.

**Background:**

- The budget growth rate recommended by the Greve Committee (an inflation of a minimum 2% compounded on the base budget from FY98) is not being realized. The budget projections mandated by NSF for FY98 to FY02 are based on a $44.4M in FY97 plus an inflation factor of 1.5%.

- The day rate discussions have now been completed, leading to an outcome that was better than the worst case envisaged, but worse than the projections in the 5 year plan. ODL made a powerful case that, with the current boom in deepwater petroleum exploration, commercial day rates on dynamically positioned drillships were up as high as $200,000 per day. This compared with the ODP day rate of a little over $70,000 per day (inclusive of reimbursables and engineering operations) for FY98. In principle, it would have been (and still is!) commercially feasible for ODL to withdraw the JR from the Program, spend as much as $60 million refitting her for petroleum operations, and make a significantly increased profit, based on as little as a three year contract. This did not put us in a very strong negotiating position!

- The outcome of the day rate discussions involved acceptance of a more responsive inflation escalator, leading to a more sharply rising day rate, plus a special “bonus” of a flat $1 million per year in addition to the total annual charter of the JR, starting in FY99.

- In part, NSF has agreed to a “budget adjustment” for the “bonus” factor; a figure of up to $1 million has been identified. Nonetheless, the Program is still short about $3.56 million (actual) over the first four years of Phase III.

The financial impact of inflation and day rate changes are illustrated in the following table:
### INFLATION IMPACT

<table>
<thead>
<tr>
<th></th>
<th>FY98</th>
<th>FY99</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base Prog. Cost</td>
<td>$44.40</td>
<td>$44.40</td>
<td>$44.40</td>
<td>$44.40</td>
<td>$44.40</td>
<td></td>
</tr>
<tr>
<td>Inflation 2%</td>
<td>$0.89</td>
<td>$1.79</td>
<td>$2.72</td>
<td>$3.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NSF 1.5% Increases</td>
<td>$44.40</td>
<td>$45.07</td>
<td>$45.74</td>
<td>$46.43</td>
<td>$47.12</td>
<td></td>
</tr>
<tr>
<td>Inflation Differences</td>
<td>$0.00</td>
<td>$0.22</td>
<td>$0.45</td>
<td>$0.69</td>
<td>$0.94</td>
<td>$2.30</td>
</tr>
</tbody>
</table>

### DAY RATE IMPACT

<table>
<thead>
<tr>
<th></th>
<th>FY98</th>
<th>FY99</th>
<th>FY00</th>
<th>FY01</th>
<th>FY02</th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revised Day Rates</td>
<td>$16.89</td>
<td>$17.44</td>
<td>$17.80</td>
<td>$18.40</td>
<td>$19.30</td>
<td>$72.94</td>
</tr>
<tr>
<td>Day Rate Bonus</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day Rate Difference</td>
<td>$0.00</td>
<td>$1.55</td>
<td>$1.68</td>
<td>$1.92</td>
<td>$2.41</td>
<td>$7.56</td>
</tr>
<tr>
<td>Budget Adjustment</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
<td>$1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net Rate Impact</td>
<td>$0.55</td>
<td>$0.68</td>
<td>$0.92</td>
<td>$1.41</td>
<td>$3.56</td>
<td></td>
</tr>
</tbody>
</table>

### TOTAL BUDGET IMPACT

<table>
<thead>
<tr>
<th></th>
<th>INFLATION + DAY RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>FY98</td>
</tr>
<tr>
<td></td>
<td>$0.77</td>
</tr>
</tbody>
</table>

The budget implications of inflation and day rate changes will be presented at the meeting. Specific instructions have now been sent to ODP Publications to execute the transition to electronic publications and the financial impact of these changes will need to be incorporated into Phase III budget projections.

The financial implications of a possible reorganization of ODP Information Services, as well as options for other cost-cutting measures within the Program, will be discussed at the ODP Managers Retreat (January 6-7, 1998) and will be presented to EXCOM.
ODP Annual Budget
(in constant CPI adjusted FY94 dollars)

(showing a projected 18.5% reduction in effective ODP budget over 8 years)
6.2.1 RECRUITING NEW MEMBERS

Action Sought:

EXCOM is asked to review and comment on the current JOI strategy for recruiting new members to the Program.

EXCOM is asked to consider reactivating the International Partnership Advisory Committee (IPAC)* to work with the ODP Director in recruiting new members.

*In 1994, IPAC was chaired by Barry Raleigh. Additional members were John Malpas and Helmut Beiersdorf.

Background:

Summary of JOI's efforts to increase international participation in the Ocean Drilling Program - 1994 to 1997.

Dave Falvey was named ODP Director in late 1994. In December 1994, Falvey prepared a strategic project plan entitled, "Increasing International Participation in the Ocean Drilling Program" (TAB X), which was presented to EXCOM at their January 1995 Meeting in Hawaii. The plan stressed that new members were required to achieve the objectives of the draft ODP Long Range Plan. Falvey warned that the process of internationalization would be complex and require more than four years before coming to fruition. One of the key features of the JOI plan was the introduction of a model of fractional membership (associate membership) which was based on an earlier model of candidate membership proposed by Jim Briden. Falvey explained that this was a pragmatic approach since, of the countries targeted, only the People's Republic of China could realistically afford the $2.95 million for full membership. The target list of countries included Russia, China, Brazil, Poland, India, South Korea, Mexico, Argentina, South Africa, and Indonesia, and scientific institutions in Taiwan. EXCOM approved the JOI strategic plan for increasing international membership by consensus.

EXCOM Consensus

EXCOM approves the objectives and increased membership strategy as outlined by the ODP Director, and willingly give the go-ahead for him to take the leads implementing his plan, including reactivation of the International Partnership Advisory Committee*.

* The composition of the advisory group (IPAC) will be determined by consultation between the ODP Director and the EXCOM Chair.

Initial efforts at internationalization focused on recruiting members to the Australia-Canada Consortium so that it could achieve full membership in the Program. To this end, South Korea, Taiwan, Mexico and South Africa were approached. Subsequently, Korea
and the National Universities of Taiwan under the name of "Chinese Taipei" joined with Australia and Canada, bringing that consortium, now known as the Aus-Can-Chinese Taipei-Kor Consortium, to an $\frac{11}{12}$th funding level. The success of JOI's internationalization strategy is further indicated by Portugal's announcement that it would join the European Consortium for Ocean Drilling on 18 April, 1997, and China's intention to join ODP as an associate member at the one-sixth level. Renewed efforts are underway in Brazil, now that Portugal has joined, led by Jamie Austin who will attend a conference in Brazil in early 1998.

**STATUS OF NEW MEMBER RECRUITING**

1. **China**
   - China has now formally been invited to join ODP as an associate member at the one-sixth level. NSF met with officials of the State Science and Technology Commission in Beijing on 13 December, 1997.

2. **Oman**
   - An internal consortium based on the Sultan Qaboos University are seeking support of other Gulf States for an associate membership.

3. **Indonesia and others in South East Asia**
   - Initial discussions were held in Jakarta at the end July. There is no response so far. Potential ASEAN members of ODP will be invited to the Darwin port call, 4 to 8 June, 1998.

4. **South Africa**
   - Major effort coincided with the October, 1997 port call. A Steering Committee has been established, involving the University of Cape Town, SOEKOR, the Foundation for Research and Development, plus other government agencies and companies. Followup visits should be carried out before the last port call in April, 1998.
ITEM J5: Report by JOI on the Implementation of the New Strategy to Increase International Membership in ODP

1. EXCOM Decision (January, 1995)

"EXCOM approved the new international membership strategy, and the project objectives. Subject to ODP Council approval of the new class of "partial" or "associate" membership, implementation can proceed. The International Partnerships Advisory Group will report directly to the Director, ODP."

2. Progress Report (June, 1995)

- A consortium of Taiwan Universities has been funded by the National Science Council in Taipei to join ODP
  - to join the Australia/Canada Consortium as a one-sixth partner
  - membership will take effect on 1 August, 1995

- The Korean Institute of Geology, Mining and Materials (KIGAM) has expressed interest in participating in ODP, also at the one-sixth level.
  - discussions underway between JOI and KIGAM
  - Falvey visited Taejon 29 April to 3 May

- Strong interest in Brazil
  - Falvey, Austin and Mckenzie to present papers at 4th International Geophysical Congress - August, 1995

- Renewed interest from P. R. China
  - recent letter from Prof Wang (Tongji Univ) indicating application for funding has been made
  - when will J. R. be in east Asian area (Sth China Sea?)?

- Emerging interest in New Zealand
  - Australian ODP office/national committee pursuing leads

- New leads in Mexico
  - Canadian ODP office/national committee pursuing possibilities

- JOI developing new lead in Russia
  - JOI in contact with Dr Leonid Polyak, Ohio State
  - possible opportunity presented by 5th Zonenshian Conference in Moscow, late November

- Need to pursue new leads in:
  - South Africa - Oman
  - Indonesia - Saudi Arabia
  - India - Venezuela

3. Options/Models for Future Membership of ODP
The current model for international participation in ODP, approved by the ODP Council, is "full membership", whether as a single nation/national institution, or as a multi-national/institutional consortium. There is no general model for partial, or fractional membership (contribution of less than $2.95 million per year) at this time. The Australia/Canada Consortium is, of necessity, operating at the 2/3 contribution level, at least through FY95, on an exceptional basis with Council approval.

In November, 1993, Prof Jim Briden wrote to the EXCOM Chair exploring the concept of "candidate membership", based on a three year initial participation; observer status at PCOM and on thematic panels; two berths per year for scientists; and one-sixth full annual membership subscription ($492K per year).

In order to deal with some of the previously identified constraints on recruiting new international partners to ODP, the following variations on this concept were agreed, in principle, by EXCOM in January, 1995. The new "Associate Membership" concept, proposed here following discussion with NSF since the January EXCOM meeting, is a matter for consideration by the ODP Council at its July, 1995 meeting. Council agreement is required before the recruitment of any new participants (beyond completion of the Australia/Canada Consortium) can proceed:

- **Eligibility** - "Associate Membership" is open only to countries/institutions who are not current full ODP members, or participants in current ODP consortia.

- **Membership Duration** - ODP Council may extend an initial 3 year term for Associate Membership, if no compatible consortium can be constructed.

- **Subscription Fee** - the Associate Membership subscription is payable in multiples of one-sixth of the full membership subscription, up to five-sixths.

- **Benefits** - Associate Members receive benefits in proportion to the level of their subscription fee. For each one-sixth of a full member subscription paid, the Associate Member receives:
  - two berths on the drillship per year, plus
  - two panel memberships, in the following increments:
    - 1/6 - one thematic; one service panel
    - 1/3 - one thematic; three service panels; PCOM observer
    - 1/2 - two thematic; four service panels; EXCOM, PCOM observer
    - 2/3 - three thematic; five service panels; EXCOM, PCOM observer
    - 5/6 - four thematic; six service panels; EXCOM, PCOM observer.
  - the Associate does not receive alternate panel memberships rights
  - voting rights on EXCOM and PCOM comes only with full (including consortium) membership.

EXCOM endorsement of this concept and its recommendation to ODP Council is requested.
INCREASING INTERNATIONAL PARTICIPATION IN THE OCEAN DRILLING PROGRAM - A STRATEGIC PROJECT PLAN

1. Background/Need

The Executive Committee of the Ocean Drilling Program has directed JOI to be more proactive in pursuing new countries and/or their scientific institutions to become subscribers to the Program. The benefits to existing ODP members of expanding the membership base are significant:

- enhancing the "global" nature of and re-enforcing the international dimension to ODP
- increasing Program access to a wider selection of regional scientific databases ("local knowledge")
- expanding the pool of scientific, engineering and technical talent available to the Program
- improving access to national Exclusive Economic Zones
- building opportunities for new educational linkages and scientific co-operation
- improving Program stability through a broadening of the support base.

Expanded membership also brings with it additional Program funding that would enhance Program delivery. The addition of the equivalent of one or more new member equivalents would achieve a number of key objectives:

- eliminate the need, in the short term, for increased membership contributions from all current partners
- increased program flexibility, such as high latitude drilling, where ice support costs are likely to exceed future budgets
- advanced engineering development, to achieve more difficult drilling objectives
- improved database development, particularly the recapture of analyses of earlier drilling data
- expanded educational programs, particularly on the socio-economic significance of Program results.
- provide, in the longer term, for alternate drilling platforms

2. Scope

There are currently 19 member, or participating countries, or groups of national scientific institutions who are members of ODP; either as full members, or as members of consortia. These represent a majority of the 19 leading economies, or economic groupings, of the world, expressed in terms of either GNP (greater than about US$400 billion) or GNP per capita (greater than about US$15,000). The following countries represent, in order, the next richest economic group, each with a GNP's greater than about US$120 billion and/or a scientific community large enough to support the Program, and who are not currently Program participants:
3. **Project Objectives**

1. To attract one or two new partial members, in order to complete the Australia/Canada Consortium by the start of FY 96 and re-establish the base of "six non-US partners"
2. To attract several other new partial members to complete the equivalent of a unit membership, or a complete Consortium by the start of FY 97.

### Constraints and Response Strategies

<table>
<thead>
<tr>
<th>CONSTRAINT</th>
<th>RESPONSE STRATEGY</th>
</tr>
</thead>
<tbody>
<tr>
<td>All countries listed above have few, if any, discretionary funds available for what could be readily perceived of as &quot;basic science&quot;</td>
<td>Study the distribution of research funding and funding mechanisms in each country. Focus on countries where some scope exists</td>
</tr>
<tr>
<td>There is already a strong precommitment of research funding in all countries to those areas of applied science seen as supporting national development priorities; commonly in agricultural, environmental and living resources research, and in some countries, mineral exploration</td>
<td>Establish the basic socio-economic significance of ODP outcomes in terms of understanding the distribution of resources, global change and natural hazards. Emphasise the role of ODP in higher education. Use the new Long Range Plan as the vehicle to make this case</td>
</tr>
<tr>
<td>The scientific and political leadership in all countries will not easily be persuaded of the overwhelming need to change the current national priorities for research funding, particularly given the relatively long time scales involved in realising benefits from programs such as ODP</td>
<td>Emphasise the strong international training and scientific networking benefits inherent in participation, as well as access to pre-publication information and new concepts. Note that participation also enhances the roles and responsibilities of the scientific leadership</td>
</tr>
<tr>
<td>Identifying the key individual scientists and science administrators in each country who have the stature and authority to change national research priorities will be a major task</td>
<td>Use current ODP community network to identify a group of active, working scientists in each country who can provide a support base and establish high level scientific/political contacts</td>
</tr>
</tbody>
</table>
Foreign visiting scientists are often unaware of the incipient internal political tensions that a suggested change in research funding can exacerbate. Any redirection of research funding priorities will probably take years. Even when a number of new partial members have committed, their amalgamation into a convenient, unit "consortium" structure may not be politically, geographically, or culturally acceptable to those participants, or their funding agencies.

Use the internal and external scientific network to build up a picture of the national science structure. Accept that new participation in ODP will take more time than we estimate! Accept that a model of fractional membership, with concomitant fractional benefits will be an ongoing feature of the ODP structure if new membership is a high priority. This may be applicable only to new participants.

### 4. Project Implementation Strategy

#### 4.1 General Approach

In general terms, there are probably six steps in the recruitment of a new candidate member, or partial member as a participant in ODP:

1. Study the general science funding situation at a national level. This should include funding levels for basic and applied science in general, and earth sciences in particular. 
   - if discretionary funding base is below US$0.5 m, abandon approach.
2. Establish/re-establish contact with key individuals of reputation in the scientific community; in a university, the national geological survey, national oceanographic institute, or national petroleum company, probably through an exploratory visit.
   - if no supportive scientific community can be established, abandon approach.
3. Discuss the planned approach with one or more current ODP members with active scientific contact in the target country/scientific institution(s). Use that member's Department of Foreign Affairs/State Department to provide the relevant political dimension. Make initial scientific attache or ambassador level contact through the candidate's Washington embassy and establish appropriate high level national/institutional contacts.
   - if no indicative response can be identified in both the scientific support base group and the scientific/political leadership, abandon approach.
4. Arrange initial series of visits, contacting both the scientific support base group and the scientific/political leadership. Use port visits of the drillship to re-enforce the significance of the program. Establish standing liaisons at top scientific support group levels.
   - if no indicative response can be identified in both the scientific support base group and the scientific/political leadership, abandon approach.
5. Make one or more followup visits to assist in the drafting of appropriate submissions to government/funding agency. Invite reciprocal visits at all levels to EXCOM, PCOM and the drillship, as appropriate.
- at this stage, abandon approach *only* if there is total rejection of participation in ODP at highest levels

6. Draft and negotiate appropriate MOU for full, or partial membership in the Program. In latter case, introduce the concept of constructing a full "consortium" membership with other partial contributors, as appropriate.

- the existing partners in ODP should *not* force consortium membership on new Program participants at a premature stage.

The rough timescale for all six steps (from first consideration to final signature), based on the more recent Australian and Taiwan Universities recruitment, is a minimum of two years.

4.2 Options/Models for Membership of ODP

The current model for international participation in ODP, approved by the ODP Council, is "full membership", whether as a single nation/national institution, or as a multi-national/institutional consortium. There is no general model for partial, or fractional membership (a contribution of less than $2.95 million per year) at this time. The Australia/Canada Consortium is, of necessity, operating at the 2/3 contribution level, at least through FY95, on an exceptional basis with Council approval.

In November, 1993, Prof Jim Briden wrote to the EXCOM Chair exploring the concept of "candidate membership". The elements of this original concept are:

- Introductory Membership - one year only; observer status at PCOM and on thematic panels; one scientist on one leg; no subscription.
- Candidate Membership - up to 3 years; observer status at PCOM and on thematic panels; two berths per year for scientists; one-sixth full annual membership subscription ($492K per year).

In order to deal with some of the identified constraints on recruiting new international partners to ODP, the following variations on this concept are proposed:

- Eligibility - drop "Introductory Membership"; candidate membership is open *only* to countries/institutions who are *not* current full members, or participants in current consortia.
- Membership Duration - the 3 year maximum term for Candidate Membership may be extended by the ODP Council if no compatible consortium can be constructed.
- Subscription Fee - candidate membership is payable in multiples of one-sixth of the full membership subscription, up to five-sixths.
- Benefits - candidate members receive benefits *in proportion* to the level of their subscription fee. For each one-sixth of a full member subscription paid, the candidate member receives:
  - two berths per year, plus
  - two panel memberships, in the following increments:
    - 1/6 - one thematic; one service panel
    - 1/3 - one thematic; two service panels; PCOM observer
    - 1/2 - EXCOM; two thematic; three service panels; PCOM observer
    - 2/3 - EXCOM; three thematic; four service panels; PCOM observer
4.3 **Status of Current Negotiations**

At the time of writing, negotiations with the target list of countries had reached the following stages (at least to the extent that they are documented or understood in the JOI Office):

- **Russia**
  - need to re-establish contact with the Shirshov Institute and the Russian Academy of Science and re-evaluate funding situation (stage 1/2)
  - coordinate with any German initiatives
- **China (±Hong Kong)**
  - follow up contact with Prof Wang Pinxian after Prof Arculus attendance at the December Symposium (Stage 2)
  - initiate stage 3 approach
- **Brazil**
  - follow up contact with Dr Luis Gamboa in PETROBRAS (Stage 4)
  - initiate stage 5 approach
- **Poland**
  - initiate stage 1 approach
- **India**
  - initiate stage 1 approach
- **South Korea**
  - follow-up new approach from KIOS (Dr Kim) and, if possible, co-ordinate with KORDI, once the involvement of the Taiwan Institutions in ODP is confirmed (stage 3)
  - initiate new approach to Ministry of Science and Technology
- **Mexico**
  - support Canadian initiative with stage 5, when appropriate
- **Taiwan (Scientific Institutions)**
  - support current initiatives by Prof Chen and Dr Lee
  - follow-up visit in January (stage 5/6)
- **Argentina**
  - initiate stage 1 approach
- **South Africa**
  - follow up contact with SOEKOR (stage 2)
  - initiate stage 3/4 approach to Foundation for Research Development
- **Indonesia**
  - follow up contact with Prof Zen (stage 2)
  - initiate stage 3 approach

5. **Target Recruitment Schedule and Financial Projections**

On the following table, the numbers refer to the various stages in the membership recruitment strategy outlined above and provide a projected timetable, with possible increases in Program funding.
6. **Project Budget**

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<td>$2 458K</td>
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**Justification**

The travel estimate is based on a one person visit to each of the 8 countries on the target list identified as requiring stage 2 exploratory visits; plus follow-up two person visits to those countries needing contact through stages 4, 5 and 6. Many exploratory visits are expected to be combined. The average visit cost is estimated to be $2 500 to $3 000, rising in out years.

The request for staff support is based on a projected need for an additional half person at the clerical/technical level to backfill absences of about 10 weeks per year in the JOI Office, plus additional travel co-ordination, planning activities and support for assistance to prospective new Program participants with proposal/submission preparation and/or review.

The FY95 budget has been endorsed by PCOM and is in the JOI allocation for FY95.
7. **Resource/Responsibility Assignments**

Task assignments will be agreed by the International Partnership Advisory Committee (IPAC), taking due note of current initiatives:

- **Mexico**
  - Canadian ODP Secretariat; with JOI support, as requested
- **Taiwan (Scientific Institutions) and South Korea**
  - Australian ODP Secretariat; with JOI support, as requested
- **Russia**
  - German ODP Secretariat/Joern Thiede; with JOI support, as requested
- **All Others**
  - JOI; with input from any ODP member with appropriate contacts in target country.

8. **Risk Management**

This project proposal represents a relatively small outlay as a proportion of the total Program cost (0.2%), but with a potential to generate new funding of between 18 and 38 times the investment over the FY95 to FY97 period alone. It is therefore proposed to manage risk through twice yearly reporting to EXCOM, plus a mid FY96 review.

9. **Reporting Structure**

As proposed at the Kyoto EXCOM Meeting:

- **Re-start the International Partnership Advisory Committee, with 3 year term and following membership**
  - Raleigh (chair); Beiersdorf; Falvey (executive officer; ex officio IPAC member)
  - Replacement for Malpas (non-US; non-European?)
- **IPAC Executive Office at JOI; line reporting to JOI President**
- **IPAC Chair to give twice yearly reports to EXCOM**

Prepared by David Falvey
JOI Inc
December, 1994
6.2.2 JOI STRATEGY FOR IMPLEMENTING PARTNERSHIPS WITH INDUSTRY FOR MAJOR TECHNOLOGY DEVELOPMENTS

Action Sought:

EXCOM is asked to review and comment on JOI's strategy for implementing partnerships with industry.

Background:

At the February 1997 EXCOM meeting, EXCOM asked JOI to develop a strategy for implementing partnerships with industry to support innovation (EXCOM Motion 97-1-19). Eight major development needs were identified at an estimated cost of about $20.7 million. In April 1997, SCICOM considered the relative priorities of these major technological developments and innovations, as well as the relative levels of effort that ODP might devote to these activities. The following motion restates the SCICOM priorities for technology development and innovation through Phase III.

SCICOM Motion 97-1-20
SCICOM Prioritizes Phase III technological developments as follows:
1. Developments essential for "any" progress on key scientific objectives of the ODP Long Range Plan
   - Microbiological Systems, Alternate Platforms
2. Developments that significantly augment achievement of scientific objectives of the ODP Long Range Plan
   - Hammer Drill Advancements, Riser-Type Drilling, Logging Innovations;
3. Developments that would enhance the science and cost effectiveness of the scientific objectives of the ODP Long Range Plan
   - Logging While Coring
   - Advanced Corks
   - Advance Borehole Observatories

At the June, 1997 EXCOM Meeting, JOI presented several mechanisms by which external funding contributions might contribute to technology development:

- Third Party Technology Development Projects: externally funded technology development, with some commitment of ODP resources needed to implement that technology. The outcome would be a "third party tool" available for ODP use, but with no ownership or intellectual property vested in ODP.

- Special Technology Development Fund to underwrite special projects within the framework of the Program. The fund would be supproted by an invited contribution from ODP partners, outside the membership fee, to a separate
"Special Technology Development Fund". The "Fund" would belong to, and be controlled and managed by the contributors to that fund, and need not be treated as "comingled" funds.

- Cooperative Technology Development Projects: "joint industry development projects", similar in structure to the current Conoco/Hydril Joint Industry Project on Riserless Mud Circulation. ODP would contribute both staff time and cash, and expect to acquire the right to freely use the developmental technology for non-commercial, or research purposes.

EXCOM agreed that to move forward on this front required an increased awareness of the broader needs of the ODP community in order to market the needs of the Program, and to proactively pass on the message, particularly to industry. The committee felt that this could be achieved by meetings and focused presentations. The matter of contractual arrangements involved with an RFP was discussed. Of particular concern was the inhibiting effect of the terms of the MOUs regarding intellectual property rights on joint industry projects (EXCOM Minutes, June 1997). EXCOM further agreed that an optimistic prospectus was needed which all committee members could promote. It was suggested that the ODP/TAMU provide a two page portfolio for each project development (i.e. the slim line riser for the JR). The importance of specific missions to industry service centers, specific potential funding sources in partner countries, or groups of countries (i.e. Europe) with particular interests (platform, tool), and science centers in partner countries where support of advanced technology for a specific project might be available, was noted. The ODP Director appealed for help from the operators in writing up projects for this portfolio.

EXCOM Motion 97-2-8
EXCOM requests that JOI explore all opportunities for industry partnership in the development of major new ODP technologies with a view to cost-sharing these developments. As an initial step, TEDCOM should be consulted on the likely potential for such joint technology projects from an industry standpoint.

JOI Response

Options for Additional Funding

At the July, 1995 EXCOM, a mechanism was agreed, in principle, by which a cooperative arrangement might be established between ODP and the Nansen Arctic Drilling Program. It was hoped that if NAD became operationally viable in the long term, joint funding of projects of mutual interest could be achieved. In ODP terms this would look like an indirect external funding contribution to the charter and operation of a second platform. NAD has not received the broadly based funding support necessary to transform itself into and operational program.
At the 22 September meeting of the International Working Group on post-2003 scientific ocean drilling, JAMSTEC announced that it was prepared to commit up to $20 million over 5 years, from 1998, to two major technology developments (a core sampling system and a long-term monitoring system that would feed into both the JR and the OD-21 drillship. Project plans for these were discussed by TEDCOM on 13-14 November. JAMSTEC confirmed at TEDCOM that these development projects were third party, as defined above.

A description of the JAMSTEC Technology Development Project follows (TAB 9). Additional details will be presented at the EXCOM Meeting.
JAMSTEC TECHNOLOGY DEVELOPMENT PROJECT

Action Sought:

EXCOM is asked to endorse the JAMSTEC Technology Development Project.

Background:

JAMSTEC has been awarded $20 million in funds over a three year period for the development of a “Sub-Seaﬂoor System Prototype”. This proposed engineering development includes a special core sampling system and a long-term monitoring system. JAMSTEC has presented their plans for these projects to the IODP/IWG and TEDCOM, indicating that although the effort was not part of ODP, the JAMSTEC engineering group wished to work in cooperation with ODP. The IWG has welcomed the important initiative proposed by JAMSTEC, and their desire to work cooperatively with the ODP, in order that the systems developed will be of use to both the current ODP and the future IODP.
Japan Marine Science & Technology Center / OD21
Position Paper
Development of Sub Sea-Floor System Prototype

JAMSTEC plans to carry out 3-years project of the “Development of Sub Sea-Floor System Prototype”, which consists of;
1) Development of Core Sampling System, and
2) Development of Long-Term Monitoring System for Legacy Holes.

When this project is completed successfully, as is shown in Fig. 1, the outcome of the project can be applied to both the future OD21 and the present ODP which are to be merged into IODP (Integrated ODP).

Especially, a close cooperation between ODP-TAMU and JAMSTEC, and a full support of JOIDES/TEDCOM are very much required in order to realize the compatibility between the OD21 and ODP. These cooperation and full support are very important especially at the early design stage to fix the fundamental specifications of the system, and for sea trial after the completion of the development. Even during the development, exchanges of experiences on fabrication and operation, know-hows and other information are indispensable between the two organizations and TEDCOM.

This development plan is at the application stage to the finance authority from Science and Technology Agency as a budget plan. Full support from TEDCOM shall be a very strong thrust for the budget approval of this plan.

The OD21 program is still outside the ODP at present, but it is clear that the international collaboration is necessary and it is inevitable that the both should merge into IODP. OD21/JAMSTEC is willing to hold international committees for this collaboration, and welcomes technological cooperations from present ODP members.

This development plan and its proposal for technological cooperation, if realized, shall become the first model case of the collaboration between the OD21 and the ODP. OD21 expect this collaboration become a model for further big and strong collaboration between the two.

BACKGROUND

The CONCORD meeting held on 22nd-24th July in Tokyo identified the scientific and technological requirements in its recommendations and statement (7) as;

“CONCORD recognizes that further technological development in coring systems and borehole measurements is required for ODP Phase III. Considering that these are also essential elements in the proposed riser vessel operation, CONCORD strongly recommends that possible ways and means to cooperate with ODP in the development of these technologies should be pursued.”

Thus, OD21 plans to carry out the following items to meet the CONCORD statement;
1) Good quality coring capability and
2) Long-Term Monitoring System for Legacy Holes

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Item-1: Development of Core Sampling System

PURPOSE
It is very difficult to get the high quality cores with high core recovery for scientific needs in certain formations such as loose and broken rock, fractured basalt, unconsolidated sands and chert/chalk interbedded formation, and so on.

The Development of Core Sampling System will provide the OD21 and ODP scientific community with a drilling system capable of;
1) getting the better cores with the better recovery,
2) penetrating presently difficult formations, and
3) penetrating as deep as possible (TD: 10,000 m+).

Development Plan
The Core Sampling Project will be developed as follows;
1) PDC/Diamond Bits with their Core Barrels (Table 1)
2) Small Diameter Rotary Core Barrel (Table 1)
3) Strong Drill Pipe for Longer Penetration (Fig. 2)
4) Other Various Downhole Tools

1) ODP has been using custom designed roller cone type core bits for hard formation coring. Core recovery for this bits varies from 10 to 50% when coring in moderately fractured basalt formation. A high speed thin kerf diamond core bit coring in the same fractured basalt formation will have a typical/average core recovery rate of 90 to 100%.

2) For deeper penetration, the inner diameter of the casing becomes smaller and smaller (Fig. 3 & 4). After setting the 9-5/8" casing string, it is necessary to use a new outer core barrel assembly and core bit with reduced diameters in order for them to pass through the casing string. A preliminary concept design for a 8-1/2" rotary core barrel system shows that one of the key design features of the 8-1/2" rotary coring system is the introduction of the proven and robust inner barrel components of the 9-7/8" RCB for increased system reliability.

   It is presumed that the lithology encountered where the 9-5/8" casing string has been set would be medium to hard formations. The 8-1/2" rotary core barrel system is thus to be designed for cutting cores in medium and hard formations.

   The overall performance with regard to core recovery of the 8-1/2" RCB is expected to be improved over that of the 9-7/8" RCB, as the inherent design of the 8-1/2" RCB results in a thinner core bit kerf width.

3) The "International Workshop on Riser Technology" held at Yokohama on October 1996 showed that 11,000 m drill string is required to penetrate the MOHO at 4,000 m water depth with 7,000 m penetration. Such deeper penetration requires the stronger drill pipe and tool joint, stronger heavy wall drill pipe, and thinner wall drill collar for smaller diameter bits. In order to achieve such scientific objectives, redesigns of the longer drill string (10,000 m+), drill pipe, tool joint, heavy wall drill pipe, and thinner wall drill collar shall be done.

4) In order to carry out effective drilling/coring, various downhole tools are required such as shock absorber, jars, bumper sub, overshot etc. They have already been developed and

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
are now under application in oil-field, but we have to recognize that they cannot be applied to the scientific drilling (wireline coring system) because the difference of the size and wall thickness. Thus, development/redesign of the downhole tools for scientific drilling shall be necessary.

**Tentative Timetable (Fig. 5)**

A design, fabrication, shop test and on-land test is planned that will be carried out for 3 years since Japanese FY1998 to FY2000.

It is very much appreciated if these special core sampling systems are tested on the ocean at the Engineering Leg with JOIDES Resolution on and after FY2001.

**Application (ODP)**

When the development has been completed successfully, the outcome of the Core Sampling System will be put into ODP use.

**Staff resources required for ODP**

Staff resources of the ODP solely working for this project are not required, and the cost is not required for ODP too.

However, in order to carry out this development, the cooperation of ODP-TAMU to JAMSTEC is indispensable. There are various kind of lithologies to be drilled/cored, and OD21 plans to use ODP's existing wireline core sampling system in order to have compatible core sampling systems with ODP. Also the newly developed core sampling systems should be compatible with ODP. Thus, the detailed design specifications of the ODP's core sampling systems should be introduced to the OD21 program. This design specification introduction should be done at the very early stage of the design phase of this development.

JAMSTEC would like to request following discussions and advises as soon as possible after when the budget proposal on this development is admitted by the Japanese Government:

- Specification of ODP core barrel system
- Experience
- Know-how (technique, skill and so on)
- Various information exchanges, etc.

Development/improvement of Core Sampling System is the first priority matter for ODP, and a new development plan shall be prepared for the ODP-Phase III by ODP which shall link with our plan proposed here. Our basic standpoint is that ODP and OD21 are responsible for their development plans respectively, but if these plans are organically concerted, the both organizations shall have a great deal of merits.

TEDCOM's welcome statement and a motion for cooperation to the OD21 shall make a step for a official discussion on the collaboration between the two organizations, and information exchange/specification transfer shall become officially possible if such collaboration is admitted by the ODP officially.

Introduction of specifications, experience, know-hows and information from ODP-TAMU and TEDCOM is an uncountable in-kind contribution to the OD21 program. In-kind contribution is an inevitable matter for the realization of the riser drill ship for OD21, and we shall try to open the way for it not only on the technology development but also on various area.

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
The direct outcome of this development belongs to OD21, and final decision of the development shall be done by OD21. But its sea trial in the ODP's Engineering Legs and applications of the outcome to the ODP shall become benefits for both the ODP and the OD21.

It will be very important to have any kind of technological meeting for substantial discussions and exchange of technical staffs between the two organizations.

Item-2: Long-Term Monitoring System for Legacy Holes

PURPOSE

JAMSTEC will develop a prototype of Long-Term Monitoring System for Legacy Holes capable of;

1) Easy Access to the Legacy Holes,
2) Easy Setting/Recovery of the Monitoring System,
3) Real-Time Monitoring for Short Duration,
4) Data Accumulation for Long Period, and
5) Easy Data Acquisition from the System

by way of Non-Drilling Vessel by using Active Launcher.

Tentative Development Plan

This System is planed to consist of Active Launcher and Monitoring Station, as shown in Fig. 6. The surface vessel is presently planned as "KAIREI", a deep sea research vessel and a support vessel for full depth ROV "KAIKO", because she has a very nice passive heave compensation system. The surface vessel can be changed to another one with nice heave compensation system.

Active Launcher with Lateral Thrusters is capable to reach the re-entry cone correctly. Monitoring Station is launched on the re-entry cone. Downhole Monitoring System is lowered at any depth in the hole.

There are three methods to get the logging data.

1) The data is transmitted in real time through the expendable optical fiber for short duration (about 48 hours) while the active launcher is staying around the Legacy hole (Fig. 7).
2) The long-term data is accumulated in the Monitoring Station, and this monitoring station is recovered by Active Launcher after about 1 year logging (Fig. 8), or
3) The data is read out by ROV, AUV or Submersible (Fig. 9).

This system is very similar to the French Nadir-Nautile system. What is different from that is the pay-load capability. As the Nautile is a neutrally buoyant free-swimming submersible, the pay-load (Monitoring System) should be neutrally buoyant by adding large volume of buoyancy modules. Scientists tend to add any sensors to the system, which makes the underwater weight of the system heavier. The addition of buoyancy modules makes the system too large to handle by a submersible.

The Active Launcher system is suspended by a strong cable, and neutral buoyancy is not required. It has a very large pay-load capability (several tonnes), and the addition of any sensors affect its size very slightly.

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Tentative Specification
- Maximum Operational Water Depth: 6,000 m
- Continuous Real-Time Monitoring Duration: Max. 48 hours (depends on position keeping capability of the support vessel)
- Data Accumulation Duration: about 1 year
- Suspended Depth Beneath Sea Floor: 500 m (to be extended gradually)
- Total Weight of Downhole Sensors*: Max. 100 kgf of underwater weight
- Wind-Up/Down Speed of Downhole Sensors*: about 20 cm/sec
- Total Round-Trip Number of Downhole Sensors*: 5 cycles

The items with * are related with a power source capacity. Lithium Ion Cells are planned now, and these items shall be reviewed at the early stage of design.

Tentative Timetable (Fig. 10)
A design, fabrication, and shallow water test is planned for 3 years from FY1998 to FY2000. Sea trial of the total system will be planned after FY2001 for the ODP's available Legacy Holes, especially around Japan now existing or those to be drilled in near future.

Application
The Long-Term Monitoring System can be applied to all legacy holes whose hole conditions are stable.

What is required to ODP is to prepare as many holes as possible with casing strings so that this system can be applied.

Staff resources required for ODP
Detail Profile of Re-entry Cone is necessary for the design of the Monitoring Station.

The data of Legacy Holes, such as hole number, location (Longitude and Latitude), water depth, hole profile (last casing shoe depth, TD, etc.), and borehole condition below casing shoe when JR left the location, is very much required for planning the monitoring site.

Staff resources of the ODP solely working for this project are not required, and the cost is not required. However, it shall be very important to promote this project by collaboration with JOIDES/PPG (Program Planning Group) and experienced organization/researchers.

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Fig. 1 Tentative Total Schedule of the Development Plan

IODP

ODP Phase IV

ODP Phase III

Request ODP to Prepare Legacy Hole for these Experiments

Development of Sub-Sea System Prototype

* Special Core Sampling System
* Long-Term Monitoring System for Legacy Holes

Basic Design
Construction of Vessel & Onboard Systems
Sub-Sea Trial
Construction of Sub-Sea & Other Systems
Operation

Verification of Battery, Sensors etc.
Legs around Japan

Verification Test at Sea
Re-Test
System Application / Verification

Application to ODP
Modification
Application to OD21

OD21

Calndr Y1 1998 1999
US.FY 1998 1999
JPN FY 1998 1999
## Table 1 Development of Core Sampling System

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[Image of core sampling tools]
Fig. 2 Strong Drill Pipe for Longer Penetration

Sea Surface

Heavy Wall Drill Pipe

Drill Pipes

Tension

Compression

Drill Collar + Other Tools

Core Sampling System

Bit

Total Depth

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Fig. 3 Casing Program I & the Necessity of Small Diameter Core Sampling System

HPCS: Hydraulic Piston Core Sampling System
ESCS: Extended Shoe Core Sampling System
Fig. 4 Casing Program II & the Necessity of Small Diameter Core Sampling System
Fig. 5 Tentative Schedule of the Development of Special Core Sampling System

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Fig. 6 Tentative Plan of the Long Term Monitoring System
Fig. 7 Real Time Data Transmission through the Optical Fiber for Short Duration

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Fig. 8 Leaving and Recovery of Monitoring Station

Surface Support Vessel

Active Launcher

Good Bye! For Recovery

Monitoring Station

Re-Entry Cone

Sea Floor

Legacy Hole

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Fig. 9 Data Read-Out by ROV, AUV or Manned Submersible

[22nd TEDCOM Meeting, 13-14 Nov. 1997, ODP-TAMU, College Station, TX, USA]
Fig. 10 Tentative Schedule of the Development of Long-Term Monitoring System for Legacy Holes

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<td>Concept Design</td>
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<td>Basic Design</td>
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<td>Modification</td>
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</table>
6.2.2 MOORE INITIATIVE

Action Sought:

EXCOM is asked to advise JOI on whether or not Ted Moore’s Industry Partnership initiative should be pursued.

Letter from Ted Moore to Ellen Kappel at JOI.

Dear Ellen,

You may remember that I talked with you in Davos about seeing if we could get a consortium of oil companies involved with helping to plan, execute (and help pay for!) some of the cutting edge research already laid out in our LRP. This was in response to Roger Larson’s moaning about the budget (echoed by my own concerns). I also checked with Susan to see if she would buy into such an idea. She said she would. You suggested that I call Missy Feeley (which I did).

Since that time, we have had a bumper crop of oil company recruiters coming through our campus looking for new hires. The oil companies are obviously in a new growth phase. It occurred to me that NOW is the time to act. I wrote a one page teaser (attached) that was intended to give the broad outline of the proposal to form a close working relationship between ODP and the US oil companies (appended). This I presented to each of the oil company representatives that came to visit and talked with them about such a proposal. I asked them if they thought their company might be interested in joining such a consortium. I explained that we would want: 1) that the consortium take an active part in planning and executing the drilling program; 2) that the consortium might be expected to contribute something like the equivalent of one half a leg per year ($3 million) for the drilling of legs that they had helped plan; and 3) that the general themes outlined in the write-up were meant to be a starting point for our discussions (they would be free to suggest other themes or participate in other aspects of our planned drilling). I made the point that this document and my approach to them was informal. I wanted to get the reaction of the “working geologist” to such a proposal and that if their reaction was generally favorable, representatives of the JOIDES/ODP would be contacting their company. I also compared such an oil company consortium to their drilling of COST wells where several companies went in together to drill a test well in a frontier area to look at stratigraphy, reservoir quality, hydrocarbon potential etc. and split the costs. This time we would be partners too.
In general the responses to these discussions was very positive ranging from very interested to very eager. They made the point that many of the oil companies are moving into deeper water exploration and did find the topics I mentioned in the write up of particular interest. So now I dump it back to you and to JOIDES. And for goodness sake don't let it just die. I firmly believe that if we are to make a viable partnership with industry, now is the time to do it. The market is right and the interest is there. I realize that with the change over of Falvey and Pisias, now may not be the best time for the JOI organization to start a new initiative, but I believe that the next contact needs to be at a higher level than I was working and I have supreme confidence in you and Susan, JOIDES, ODP and the Admiral. If you need any further information just let me know.

************************************************************************

A proposal for a cooperative effort between the US oil industry and the Ocean Drilling Program.

The Ocean Drilling Program (ODP) is an international scientific drilling program which has drilled over 1000 holes into marine sediments and rocks in search of a more complete understanding of earth processes. The sites drilled are selected based on the submittal and review of unsolicited proposals addressing what are considered to be "cutting edge" scientific questions.

In the recent past ODP has identified two areas where new opportunities for major advances in understanding are possible: 1) fluid flow in the uppermost crust of the ocean, and 2) the biosphere contained deep within marine sediments and rocks. Recent discoveries have indicated the importance of both of these areas of study in understanding 1) the mechanisms of fault movement in areas of tectonic compression, 2) movement of fluids in a fractured medium, 3) transport of heat and chemical species in a active fluid flow regime, 4) chemical exchange and mineral precipitation in an active fluid flow system, 5) bacterial alteration of organic matter and other sedimentary components, 6) migration and trapping of biogenic gas, 7) production and maintenance of gas hydrates in the marine environment, 8) bacterial communities and life cycles at and below the sediment surface in a marine environment.

The Science Steering and Evaluation Panels of the ODP believe that by joining with oil industry scientists in a cooperative effort, better and more rapid progress can be made toward defining the experiments to be carried out, planning the sites to be drilled, and undertaking the drilling programs that address these two new areas of scientific inquiry. To this end we propose that a planning committee composed of oil company and ODP representatives be set up as a first step toward establishing a partnership. The main task of this partnership would be the planning and carrying out of sampling programs that would address these scientific problems.

T. C. Moore, Jr., Chair of Dynamics of the Earth's Environment Science Steering and Evaluation Panel, ODP.
PEOPLE TO WHOM THIS WRITE-UP WAS GIVEN:

Exxon Production Research Co. (Houston, TX)
Winifred Burgis (in addition to talking with Missy Feeley who I think is with ECC now). Wendy thought this was definitely something EPR would be interested in.

Shell Offshore Inc. (New Orleans, LA) Steven Glass (I did not talk directly with this young man, one of my colleagues (Bob Owen) did. He suggested that Steve was a little new at his job) Conoco Inc (Lafayette, LA)

Lana Czerniakowski (Gulf of Mexico Div). Lana thought this was a terrific idea especially with the companies interest in deeper water plays.

Mobil Exploration and Production, Rick Stever (Midland TX)
Bill Zempolich "Tulpar Munai LTD." Dallas TX. Both these young men were very interested in the prospect and urged us to carry it forward.

Amoco Exploration and Production (Houston TX), Lee McRae. Lee was familiar with ODP and thought this was a worthwhile course to follow.
AUGUST 1997 SCICOM MINUTES

SCICOM Meeting, August 18-20, 1997
Davos, Switzerland

Motions, Consensus Statements, and Action Items
(DRAFT) (Corrections made 11/97)

A. Welcome and Introduction

SCICOM Motion 97-2-1
SCICOM approves the Agenda for their August 1997 meeting.
Proposed: Natland, Seconded: Scott
15 in Favor, 1 Absent

SCICOM Motion 97-2-2
SCICOM approves the Minutes of the April 1997 SCICOM Meeting held in Kona, Hawaii.
Proposed: Larson, Seconded: Kudrass
10 in Favor, 5 Abstentions\(^1\), 1 Absent
\(^1\) - those who were not present at the Kona meeting

Action Item for the JOIDES Office: the JOIDES Office will solicit two-page CV's from SCICOM and OPCOM members to post on the web page, or set up links to members' personal web pages.

C. Review of FY'98 Schedule

Action Item for OPCOM: SCICOM requests that OPCOM look into fall-back options for Leg 179 in the event that the hammer-drill test has to be postponed.

Goldberg presented items related to FY '98 deployment changes and their associated costs:

- The GHMT is scheduled for three legs and a cost increase from Schlumberger is expected of ~$26.4K.
- DLL is scheduled for two hard-rock legs, but it is suggested that this be replaced by the ARI at an increased cost of ~$57K.
- Replace the SDT with the DSI (for five legs will cost ~$ 88K).
- This year, due to budgetary restrictions, two back-up tools from the standard tool string have been removed: the high-resolution natural gamma and a high-powered neutron tool. The costs to replace these back-up tools would be ~$96K for the HNGS, and ~$110K for the APS backup tools.

By consensus, SCICOM agrees with the prioritization of proposed tool deployment changes for FY'98 as put forward by ODP-LDEO.
SCICOM Motion 97-2-3
SCICOM's highest priorities are the conduct of high quality science and the fostering of the technological innovation necessary to implement the ODP Long Range Plan. For FY’98, SCICOM recognizes the need to support the scheduled Antarctic drilling with an ice vessel. This will require funds beyond those originally budgeted. SCICOM also places highest priority on continued development of active heave compensation. Although SCICOM recognizes that data migration is important, the scientific needs of the program dictate that it is a lower priority. Given the severe financial constraints in FY’98, and the need to balance the priorities for ODP activities, SCICOM recommends to JOI that whatever funds are available from savings in FY ’97 and FY’98, and funds originally budgeted for data migration in FY ‘98, be reallocated to completion of the active heave compensation project.

Proposed: Miller, Seconded: Natland
15 in Favor, 1 Absent

D. Ranking of Proposals Based on Science

SCICOM Motion 97-2-4
In order to align the voting procedures with the new Science Advisory Structure, SCICOM revises PCOM Motion 96-1-5 and adopts the following three-step voting procedure for purposes of determining a drilling schedule. Conflicted SCICOM members will be excluded from this entire process.

Step 1: Choose programs to retain for purposes of an integrated global scientific ranking, based on advice from the SSEPS as to their priority and relevance to the ODP Long Range Plan:

Option 1: Panel consensus on recommendation of Chair;
Option 2: Show-of-hands vote on each drilling proposal, with retention of a proposal for ranking based on 50% or more of votes in favor.

Step 2: Rank proposals based on scientific quality and priority. Given X programs retained from the previous step, un-conflicted SCICOM members will rank programs from 1 to X, on a signed paper ballot. After voting, written ranks of each program by each voter will be tabulated and the mean ranking and standard deviation of each program will be calculated. Paper ballots will be retained in the records of the meeting. A list of proposals that SCICOM wishes to be scheduled will then be determined from the ranked list, and will be forwarded to OPCOM.

Step 3: OPCOM will then prepare a draft schedule which will be sent to SCICOM for consideration of quality of the proposed schedule as a whole and the budgetary implications. SCICOM will vote by e-mail to accept or reject the schedule proposed by OPCOM, based on a simple majority of votes cast. Rejection of the schedule at this stage dictates the preparation of a new schedule by OPCOM.

Proposed: Natland, Seconded: Moore
15 in Favor, 1 Absent

Note: EXCOM needs to approve this Motion.
SCICOM Motion 97-2-5

SCICOM approves the following ranking for programs to be considered for scheduling by OPCOM in FY'99 and beyond:

1) 484- E. Asia Monsoon
2) 426- Australia-Antarctic Discordance
3) 445- Nankai Trough
4) 472- Izu- Mariana Mass Balance
5) 455- Laurentide Ice Sheet Outlets
6) 490- Prydz Bay
7) 448- Ontong-Java
8) 465- SE Pac. Paleoceanography
9) 486- Paleogene Equatorial Pacific
10) 431A- West Pacific Seismic Network (Japan Trench)
11) 431B- West Pacific Seismic Network (ION sites)

Scheduling for FY '99 is to be in the general area of the Indian Ocean and Western Pacific. Some of these programs require modification before final approval of drilling plans by SCICOM. Proponents will be informed of the requested modifications by correspondence from the SCICOM Chair.

The following proposals, ranked below the above proposals, are returned to the ISSEP and ESSEP for revision, external review and/or comment, as detailed in correspondence to the proponents by the SCICOM Chair (and copied to the SSEPs Chairs).

12) 355- Peru Gas Hydrates
13) 451- Tonga Forearc
14) 463- Shatsky Rise
15) 450- Taiwan
16) 499- ION, Eq. Pacific

Proposed: Natland, Seconded: Raymo 12 in Favor, 3 Abstentions, 1 Absent

Action Item for the JOIDES Office: Humphris will send out a request from nominations for the approved legs after OPCOM, and send them to ODP-TAMU by the end of October.

F. FY '99 ODP Budget

By consensus, SCICOM agreed on the following prioritized list of high-priced, non-leg related items:

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<th>Priority</th>
<th>Item</th>
<th>Estimated cost</th>
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<tr>
<td>1</td>
<td>Hard rock coring</td>
<td>400 K</td>
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<tr>
<td>1</td>
<td>Deep Drilling</td>
<td>100K</td>
</tr>
<tr>
<td>2</td>
<td>Downhole lab</td>
<td>400 K</td>
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<tr>
<td>3</td>
<td>XRD</td>
<td>150 K</td>
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<tr>
<td>4</td>
<td>Data Migration</td>
<td>335 K</td>
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<tr>
<td>5</td>
<td>Microbiological Facility</td>
<td>400 K*</td>
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</tbody>
</table>
The other items are grouped as follows:

High Priority (in no particular order):
- CLIP-II
- CORESEIS
- Borehole Stability Project
- Sampling Parties

Medium-Low Priority:
- FMS Atlas

Low Priority (in no particular order):
- P-Code Receivers
- Technical Support (this is low due to the commitment by ESF to provide this support outside of the ODP budget).

SCICOM Motion 97-2-6
SCICOM recognizes the importance of embracing a wider scientific constituency in all member countries. In future planning, SCICOM will make every effort to incorporate the interests of other scientific communities into ODP's drilling plans.

Proposed: Humphris, Seconded: Larson
15 in Favor, 1 Absent

H. Science Planning - Status of PPGs

Action item for the JOIDES Office: Humphris will forward copies of requests for PPG meetings with the agendas to TAMU and Lamont (and SSP if appropriate).

Recommendations for Additional PPGs

Ultra-high resolution paleoclimate/paleoceanography -- By consensus, SCICOM agreed that this topic should be handled internally without a specific PPG, with liaisons to other groups like PEP, PAGES, etc.

Hydrology of the ocean crust -- By consensus, SCICOM decided not to appoint a separate PPG at this time.

Sea Level -- By consensus, SCICOM declined to form a PPG at present, but recommended a scientific workshop to define scientific strategies. Once this is accomplished, then ODP will reconsider the formation of a PPG.

Miller said he can send out a request to sea level groups and encourage them to write a proposal for such a meeting.
Conjugate rifted margins -- By consensus, SCICOM decided that a PPG on conjugate rifted margins is not needed at the moment.

**SCICOM Motion 97-2-7**

The study of marine gas hydrates has been designated a high priority theme in the current ODP Long Range Plan. Based on the successful outcome and exciting results stemming from the gas hydrate drilling program during ODP Leg 164 on the Blake Ridge, as well as a number of other gas hydrate drilling achievements on other legs, SCICOM establishes a Gas Hydrates Program Planning Group in order to determine the future scientific goals and directions, and associated technological needs, for continued gas hydrate investigations.

**Overall Goals**

To develop a plan of drilling and sampling to:
- study the formation of natural gas hydrates in marine sediments
- determine the mechanism of development, nature, magnitude, and global distribution of gas hydrate reservoirs
- evaluate the source of the gas locked up in hydrates
- investigate the gas transport mechanism, and migration pathways through sedimentary structures, from site of origin to reservoir
- examine the effect of gas hydrates on the physical properties of the enclosing sediments, particularly as it relates to the potential relationship between gas hydrates and slope instability.

**Mandate**

To work with other appropriate international geoscience initiatives to:
1) develop the drilling strategy to complete the defined goals
2) identify geographic areas appropriate to meeting scientific objectives
3) advocate new and/or better technologies to achieve the objectives
4) organize and nurture the development of specific drilling proposals.

**Timeline**

The PPG will exist for a maximum of three years, during which time it will report to the SSEPs on a regular basis. SCICOM will conduct an annual evaluation of the necessity for its continuation, with advice from the SSEPs.

The PPG will produce a final written report of the overall plan and its recommendations for implementation.

Proposed: McKenzie, Seconded: C. Moore 14 in Favor, 2 Absent
By consensus, SCICOM agreed to remove the words "reef" and "low latitude" from the name and mandates of the Scientific Drilling of Shallow Water Systems" PPG.

I. Dry-Dock Issues

**Action Item for SCIMP:** SCICOM asks SCIMP (with input from the Biosphere PPG to look into (1) the existence, and availability of, containerized microbiological labs and the equipment/facilities contained therein; and (2) the methods by which work with radioisotopes is currently handled on other oceanographic research vessels. Natland will write a note to SCIMP to inform them of this decision.

**SCICOM Motion 97-2-8**

SCICOM accepts the SCIMP prioritization of items for laboratory upgrades. It additionally places into the "High Priority" category:
1) the expansion of the Downhole Measurements Laboratory,
2) the definition, and preservation, of space for a containerized Microbiology laboratory.

*Proposed: Pearce, Seconded: Casey Moore*

| 75 in Favor, 1 Absent |

J. On-going Implementation Projects

1. **JANUS Update - (J. Farrell)**

**Action Item for SCIMP:** SCICOM requests that SCIMP provide some recommendations regarding how data from Leg 171B on get transferred to, and updated in the JANUS data base.

2. **Publications**

By consensus, SCICOM recommends that the JOI Publications Steering Committee be asked to define the contents of the CD-ROM companion volume, and assist JOI in identifying appropriate test user groups during the further development of the electronic publications products.

**SCICOM Motion 97-2-9**

SCICOM applauds efforts to provide cutting-edge technology in data access and electronic publication that will result in greater access of ODP data and scientific interpretations to the global scientific community. However, SCICOM is aware of the concerns of some of the ODP community in not producing a paper version of the Initial Reports volumes during a transition period. Therefore, SCICOM support the production of an abridged companion paper version to accompany the CD, and suggests that JOI investigate subcontracting publication of a paper copy on user-demand and at cost to the user for a transition period.

*Proposed: Miller, Seconded: McKenzie*

| 14 in Favor, 1 Abstain, 1 Absent |
M. Liaisons to Other International Programs

EXCOM tasked SCICOM with defining an appropriate formal liaison with the Nansen Arctic Drilling program because they are very interested in having some sort of cooperative arrangement with ODP, and possibly using ODP's core facilities and description techniques. **By consensus, SCICOM agrees to establish a liaison to NAD.**

**Action item for the JOIDES Office:** SCICOM requests that the JOIDES Office invite someone from NAD to the next meeting to provide an status report on planning to SCICOM.

N. New Business

1) Add-On Experiment for Leg 179 --
**Action item for OPCOM:** SCICOM requests that OPCOM look at whether logistically it is possible to incorporate an oblique VSP experiment into Leg 179.

2) Proposal Review Procedures --
**Action Item for the SSEP Chairs, JOI, and the JOIDES Office:** this group should review the external comment criteria, and revise them as necessary for the next external comment process.

O. Future Meetings

The next SCICOM meeting will be held in Boulder, Colorado, on March 18-20, 1988, and hosted by Jonathan Overpeck. OPCOM will take place in Boulder immediately before them on March 16-17, 1998. **(Note: At the OPCOM meeting, it was decided that OPCOM would meet on the 17th and then in Joint Session with SCICOM on 18th March).**

The dates for the summer meeting of SCICOM in Durham, U.K., hosted by Julian Pearce, have been changed. The originally proposed dates overlap with the International Paleoceanography Conference in Lisbon. SCICOM will take place on August 17-19, 1988, followed by PANCH on August 20, 1988, and by OPCOM on August 21-22, 1988.

P. Other Motions

**SCICOM Motion 97-2-10**
SCICOM would like to thank Dr. Tim Francis for his service as Deputy Director of the Ocean Drilling Program, and wishes him well in his new endeavors. Tim has skillfully helped us to chart the track of the JOIDES Resolution, and has never failed to clear its path, and oft-time ours, over many years. He has ably represented the interests of ODP, and of scientific ocean drilling, to the JOIDES planning structure, and to the scientific
community at large. We shall miss his unfailing good humor and cheerful optimism. As he leaves, we wish him to know that he has many good friends among us, and always will.

Unanimous

**SCICOM Motion 97-2-11**
SCICOM thanks Dave Falvey for his service as Director of JOI. Dave has worked with his many talents on our behalf at jobs ranging from introducing ODP to financial realities through A-based and X-based budgeting, to seeking out new ODP members in the economically emergent countries of the world. By accepting the Directorship of the British Geological Survey, he will be taking on some of these same challenges clothed in different forms, and incidentally, will be helping to reverse the fast tide of Irish "immigration" from the British Isles. We wish him well.

Unanimous

**SCICOM Motion 97-2-12**
SCICOM thanks Judy McKenzie for hosting the August SCICOM meeting with her ideal combination of Swiss efficiency and American enthusiasm. By bringing us to the jeweled kingdom, she has given us opportunities to walk across continent-ocean boundaries now 1000's of meters above sea level, eat and work in a hotel used by the economic leaders of the world, and stand on streets that conceal enormous fortunes in international bank accounts. We greatly appreciate our visit to Switzerland -- a crossroads of multilingual cultures and high-level expertise -- because it is a country that exemplifies, as no other, the same mixture of international talent and cooperation that exists onboard the JOIDES Resolution.

Unanimous

**SCICOM Approval 97-2-13**
SCICOM approves by e-mail the schedule for FY'99 (and beyond) as follows:

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<th>Leg</th>
<th>Dates</th>
<th>Activity</th>
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<tr>
<td>Leg 184</td>
<td>Feb - April</td>
<td>East Asia Monsoon</td>
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<tr>
<td>Leg 185</td>
<td>April - June</td>
<td>Izu-Mariana Mass Flux</td>
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<tr>
<td>Leg 186</td>
<td>June - August</td>
<td>W. Pacific Seismic Network - Japan Trench</td>
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<td>August - October</td>
<td>DRYDOCK</td>
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<td>Leg 187</td>
<td>Oct. - Dec.</td>
<td>Australia-Antarctic Discordance</td>
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<tr>
<td>(Leg 188)</td>
<td>Dec '99 - Feb '00</td>
<td>Prydz Bay</td>
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The following constraints and limitations were noted for certain of these legs:

E. Asia Monsoon: contingent on satisfactory site survey data. There is also an issue of research clearance for the two southern sites. TAMU will begin trying to obtain approval immediately, but the possibility exists that the leg may have to proceed without those two sites. This was felt to not seriously impact achievement of the scientific goals.
Prydz Bay: this is PENCILLED IN ONLY, and will be contingent on two factors. First, that the W. Antarctic Peninsula leg demonstrates that the scientific objectives can be achieved with the proposed drilling strategy. Second, that the proponents can find a way to make a substantial contribution to the cost of an ice support vessel. It is very unlikely that ODP will be able to cover the full cost of ice support vessels under the current budgetary predictions.

The vote was as follows: For: 13, Abstentions: 2 (both conflict of interest), Absent: 1
SCICOM Meeting, August 18-20, 1997
Davos, Switzerland

DRAFT Minutes

PARTICIPANT LIST

Members
Lisa Tauxe* Scripps Institution of Oceanography, UCSD
Susan E. Humphris (Chair) Woods Hole Oceanographic Institution
Emily M. Klein Duke University, Durham
Hermann R. Kudrass BGR, Germany
Roger L. Larson Graduate School of Oceanography, URI
Yves Lagabrielle** University of Brest, France
Judith A. McKenzie Swiss Federal Institute of Technology (ETH), Zurich
Kenneth G. Miller Rutgers, The State University, New Brunswick
J. Casey Moore University of California, Santa Cruz
Dave Hodell*** University of Florida, Gainesville
Jim Natland**** University of Miami, RSMAS
Julian A. Pearce University of Durham, United Kingdom
Maureen E. Raymo Massachusetts Institute of Technology
Steve D. Scott Canadian Secretariat for Ocean Drilling, Toronto
Kensaku Tamaki Ocean Research Institute, University of Tokyo, Japan

Apologies
Gerard Bond Lamont-Doherty Earth Observatory
* alternate for K. Brown, ** for J. Ludden, *** for J. Overpeck, **** for Greg Moore

Liaisons
Dave Falvey Joint Oceanographic Institutions, Inc.
Jack Baldauf Science Operator (ODP-TAMU)
Dave Goldberg Wireline Logging Services (ODP-LDEO)
Bruce Malfait National Science Foundation

Guests & Observers
Paul Dauphin National Science Foundation
Kathy K. Ellins JOIDES Office, Woods Hole Oceanographic Institution
Ellen Kappel Joint Oceanographic Institutions, Inc.
P. Jeff Fox ODP-TAMU
Tim Francis ODP-TAMU
Maria Mutti JOIDES Office, Woods Hole Oceanographic Institution
Keir Becker University of Miami, RSMAS
John Farrell Joint Oceanographic Institutions, Inc.
Ted Moore ESSEP Chair, University of Michigan
John Tarduno ISSEP Chair, University of Rochester
Lloyd Keigwin Leg 172 Co-chief, Woods Hole Oceanographic Institution
Laurent d'Ozouville EMaPS-ESF, Strasbourg, France
A. Welcome and Introduction

Humphris welcomed the SCICOM members, liaisons and guests, and asked everyone in the room to introduce themselves, their affiliation, and the capacity in which they were attending the meeting. She explained that Gerard Bond was unable to attend this meeting as originally planned, due to an injury incurred while doing field work. McKenzie explained the logistics of the meeting.

Humphris then went through the Agenda of the meeting, and added two new items: under section C, Goldberg has some items to present regarding logging during FY '97, and under section G, Becker will give a short presentation about the results of Leg 174B. The presentation about Leg 173 by Marie-Odile Beslier was canceled due to health problems. Humphris asked if there are any other Agenda items that anyone would like to add, but none were suggested.

**SCICOM Motion 97-2-1**
SCICOM approves the Agenda for their August 1997 meeting.

Proposed: Natland, Seconded: Scott
15 in Favor, 1 Absent

Humphris then asked if there are any comments or changes to the Minutes of the last April meeting in Kona, Hawaii. No additional suggestions were made.

**SCICOM Motion 97-2-2**
SCICOM approves the Minutes of the April 1997 SCICOM Meeting held in Kona, Hawaii.

Proposed: Larson, Seconded: Kudrass
10 in Favor, 5 Abstentions, 1 Absent

(1 - those who were not present at the Kona meeting)

Humphris presented the status of the action items from the last SCICOM meeting. All action items have been addressed or will be during this meeting. Farrell asked if the upcoming legs are listed in the EOS article that has been submitted by the JOIDES Office. Humphris replied that the article included the FY98 program. Natland asked if the format for the CVs that will be placed on the web for all SCICOM members has already been decided. Humphris replied that it will likely be a two-page CV, analogous to NSF's CVs, and focused on ODP. Casey Moore asked if it will be possible to set up a link from the JOIDES Office Web page to personal pages containing the CVs. Humphris replied that this is a good idea.

**Action Item for the JOIDES Office:** the JOIDES Office will solicit two-page CV's from SCICOM and OPCOM members to post of the web page, or set up links to members' personal web pages.

B. Reports of Liaisons

1. NSF - (B. Malfait)
1) Malfait started the report showing a timeline (Appendix 1), which indicates that the existing NSB Funding Approval continues until the end of FY '98. We are now moving into the first part of FY '98, and new NSB Funding Approval for FY'99-02 has to be obtained.

Malfait then gave an update on the ODP Council Meeting, which took place on June 6, 1997 in Brest. Regarding the renewal commitments for 1999-2003, all members were positive. Formal commitments have been received from Germany, United Kingdom, and the Pacific Rim Consortium. A final decision from Japan was expected in July, but has not arrived yet. The ESF Consortium appears positive, but the continued participation of Italy is still a question. It is hoped that a final decision from France will be conveyed to NSF soon. Among the ODP members, only Germany was supportive of a contribution increase, but all members expressed sympathy for increased program funding. Other issues discussed at the meeting were concerns, especially from Germany, over the elimination of printed Proceedings volumes. The Council Meeting received very positively the well-done SCICOM Chair's summary of the Program's scientific accomplishments over the last year.

2) NSF Review Panel (1998-2002)- The Review Panel, chaired by Bill Ruddiman, strongly recommended continuation of funding for ODP, and an increase in the program budget. The panel also found the Science Plan to be well balanced, and appropriately focused, with some exciting and fresh problems being addressed. However, concern was expressed that potential accomplishments were often overstated. The Panel also recommended that a more measured approach for implementing biological studies on the JOIDES Resolution would be more appropriate. In addition, the technological development plan was found confusing. The panel expressed concern about the JOIDES reorganization, and its impact on the long-term vision required for consistent science planning. Malfait commented on this SCICOM's meeting attendance. A review of previous PCOM attendance demonstrated that, in the past, only a minor number of alternates were involved. The Review Panel also noted that the public outreach of ODP science has significantly improved, but there is still room to do more with the broadcast media. The Panel also concurred with a reduction in the publication costs to meet other budget priorities.

A written document with the recommendations of this Review Panel will be available in November to JOI for posting on their Web page.

3) Other items:
- the 1998 NSF budget looks positive, and includes a $1.5M increment for dry-dock.
- an invitation has been extended to the People's Republic of China for an associate membership at 1/6 level. Panel membership will need to be negotiated.
- NSF has received the COMPOST II report regarding post-2003 drilling. It is consistent with the recommendations of CONCORD, and is now final and available on the JOI web page.
- the FUMAGES (Future of Marine Geosciences) report is also final and available on JOI web page.
• the MARGINS Planning Office is now funded by the Ocean Sciences and Earth Sciences Divisions. Brian Taylor is the new Chair with the office at the University of Hawaii.

Kappel asked about the $1.5 M listed for the dry-dock, and said that in the budget JOI had submitted the amount of $3 M was listed for this purpose. Malfait said that indeed $1.5 M is still missing. Klein asked if the Chinese associate membership will help to balance the flat budget. Malfait commented that this would be the first membership with an associate, rather than a full member status, at the 1/6 level. Falvey added that the concept of associate membership was approved by EXCOM in June 1996, and he added that now Brazil, and possibly Russia and Indonesia, are thinking of joining the program under these terms.

2. JOI - (D. Falvey)


Falvey reviewed the success of the Charleston and New York Port Call and related events, and the coverage they received in the news. Charleston had an advantage in that it immediately followed the K-T boundary recovery, which grabbed the media's attention around the world. Two press releases came out - one from ODP as the ship docked, and then a later one put out by NSF. These received the following coverage:

- TV coverage nationally and internationally was estimated to reach 40 million people;
- most of the major daily newspapers, with an estimated circulation of 6 million in the US alone;
- many science magazines.

Total reach was about 60 million people.

In New York, there was the advantage of running helicopter trips to the ship while it was off New Jersey. The following coverage was attained:

- NHK (Japan) and the BBC went out to the ship to film segments for documentaries, and there were items on CBS and NBC Nightly News (the latter reached 12.5 million viewers). Total number of people reached is estimated to be about 35 million.
- Newspapers - there was almost a full page in the US version of USA Today; there were also news articles in the NY Times, Washington Post and Philadelphia Inquirer - an estimated total circulation for all these of almost 5 million.
- NPR's Morning Edition re-broadcast a story three times -- with an estimated audience of 8 million.
- The Scientific American web page from a reporter on the ship had about 100,000 hits /day for thirty days.

Hence, from those two port calls, an estimated total of 110 million people were reached.

2) Partnership with industry and technical developments

Over the last year, SCICOM/PCOM has identified several aggressive technology developments that are required for Phase III. These are entirely unfunded and would remain so under the scenario of zero growth outlined by Malfait. The Strategic
Implementation Plan was designed to look at what was needed to carry out the LRP -- this became the LRP option and required budget growth, which is not the condition under which the Program is operating at the moment. EXCOM asked JOI to explore different options to get that technology developed by looking into ways of working with industry or with anyone else. JOI came up with a number of different models for working with others to achieve some of the technology development:

- **Third party technology**: this could be done by JOIDES partners trying to separately and independently raise the funds for specific developments. For example, there has been some discussion of some of the European members developing a microbiological facility with funding from the European Union.
- **Special technology development fund**: this would be for those partners who would be willing to put extra money into technology development.
- **Joint industry development projects**: in which ODP would be a partner in a development, such as is being done with the Conoco riserless circulation development.

In terms of budgets, $1M would make the difference between the current program plan base and starting to trigger the first level of special technology development, assuming one of the three mechanisms above can be used.

Miller asked if JOI has thought of putting together a home page for students where they can "participate" in the science as it is happening. Falvey said this is a good idea, but they have only two people who could work on this, and they are already over committed. Kappel, Miller, and Farrell all agreed that it would be a very good idea. Baldauf mentioned the case of the journalist who sailed on Leg 174B, and produced information on the web, and suggested this could be used again in the future. Humphris commented that, given that the ship is going to be away from the US for the next few years, a web page might be a good approach to take to try to keep students and others in touch with the Program. Scott said that there was excellent coverage from the news in Canada, but ODP was never mentioned. Falvey responded that it is a difficulty that is experienced frequently over which ODP has no control. Larson asked who covered the cost of the helicopters. Falvey replied that NHK and BBC had paid for their trips, and that JOI had covered the cost of only two.

**3. ODP-TAMU- (J. Baldauf)**

1) **Plans for FY'97 and FY'98**

Due to savings in fuel, as well as to the reorganization and unfilled positions, there is approximately $105,000 savings in FY '97 (Appendix 2). He asked SCICOM for advice on whether this money should be redistributed either to the active heave compensation project or to data migration.

Baldauf then reviewed the budget for FY '98, including both A-base and X-base items (Appendix 3), and discussed in detail the leg-related and non leg-related expenses in the X-base budgets. There are a number of risks in the FY'98 budget as currently constituted, including:

- the ice boat is budgeted at $700K, but will cost >$1.2M
- fuel is budgeted at $187/m. ton
• the lowest quoted airfares have been used for travel estimates
• shipboard laboratory upgrades are minimized
• staff training is reduced
• an engineer is required for the dry dock (~$160K)
• the day rate is being renegotiated
• increases due to the publication of hard-copy IR volumes in FY'98.

2) Technological developments
• Hammer Drill. The purpose of this project is to adapt existing technology to ODP requirements for establishing a re-entry structure on sloped, bare rock formations. It involves the development of a hammer drill for a re-entry cone and a 13 3/8" casing hangar system. The total projected budget for this project for FY'96 through FY '98 is $892,209 - close to the original estimated budget of $878,245.

The land testing of a 12 1/4" hammer has been completed, and the hammer performed well (3 m/hr). There are still two areas of uncertainty. One problem was that the closing force is too great and presents a risk of buckling, so modifications are underway to reduce the force by 30%. In addition, weight-on-bit at spud-in is critical and requires <1 m heave. Second, the hammer longevity is less than 5 hours and 12 hours are required. Sea trials are scheduled for Leg 179, and there is about an 80% confidence level that the system will be ready. However, a definite decision will be made by 15 October 1997, so SCICOM/OPCOM needs to consider what the options for Leg 179 may be if the system is not ready for testing.

A dialogue has been established with IET in China, Aquatic in Russia, and the Joint Industrial Project on other developments that are currently underway in hammer drilling.

• Active Heave Compensation. The scope of this project is to retrofit the passive heave compensator with electronic controls/hardware that will allow active heave compensation of all operation modes. This will remove 90% of ship heave vs. 50-70% at present, thereby providing greater responsiveness and reduced range of WOB, and improved bottom hole operations (e.g. landing the BHA, core yields in high seas, bit life). The estimated cost of this project is $700K to $1.1M (Appendix 4).

Installation could occur anytime between Legs 179-183, but the project is currently on hold depending further funding decisions. If Leg 179 is determined to be the timing of installation, a PO would have to be written by Sept. 1997.

• JANUS. TRACOR has provided an ORACLE database system with Group 1-4A applications (Appendix 5), source code, code documentation, and manuals. Changes will be required to Paleontology, Physical Properties, Logging, and XRD based on recent JANUS Steering Committee recommendations. The current project ends September 30, 1997. The total funds committed through 30 September '97 are $3,708,657. There is $200,000 in the FY'98 X-base budget for AppleCORE.

• Data Migration. The goal of this project is to migrate selected prime scientific data (Legs 101-170) in digital form to the JANUS Management system. During FY'97, user requirements were refined, and an RFP was issued with the general order of migration as FY'98 - MST datasets, FY'99 - Chemistry datasets, and FY'00 - Phys. Props datasets. The time frame initially proposed with an October target start date cannot be achieved, as the funding is insufficient to complete the project in the proposed time
frame (Appendix 6). Baldauf suggested other budget options with different timelines (See Appendix 6).

3) **Leg Operations**
   Baldauf gave an update on the staffing status of Legs 173-183, and reported on some logistical aspects of Leg 173, Leg 174A, Leg 174B and future legs.

4) **Non-Leg Operations**
   Baldauf concluded his report by providing the following staffing information:
   - Tom Davis is the new Manager of Science Services
   - Brad Julson is the new Supervisor of Technical Support, Science Services
   - Tim Francis has announced his departure in late 97/early 98
   - There has been some turnover in the Drilling Services staff (3 FTEs), and efforts are being made to emphasize a team approach and more effective communication.

   Natland commented that the costs for the ice-boat were approved at PCOM in December and he asked how the decision was made to transfer the additional funds from the Active Heave project. Humphris replied that the demand for ice-boats has increased and, after the responses to the RFP were received, a commitment had to be made to secure a vessel as soon as possible. The decision to make funds available, and identifying a possible temporary source of those funds as the active heave compensation project was made by Falvey (JGI) and Humphris (JOIDES Office). SCICOM now has the opportunity to look the FY’98 X-base budget and decide from where the additional funds should be transferred.

4. **LDEO - (D. Goldberg)**

1) **Recent Logging Results**
   Goldberg reported on the logging results from three recent legs: Leg 173 (Iberia), Leg 174A (New Jersey), and Leg 174B (CORK hole 395A) -- see Appendix 7.

2) **Upcoming Operations**
   Goldberg discussed the tools that are planned for Legs 175-177. These include:
   - Leg 175: Standard and GHMT tools
   - Leg 176: Standard, DSI, DLL, and VSP tools
   - Leg 177: Still to be determined, but the tools will include the GHMT.
   (Additional information and constraints related to the FY’98 program were deferred until the discussion of the status of FY’98 planning - Section C.)

3) **FY’97 On-Going Projects**
   - **Oracle Log Database.** The Tables for technical/operational data have been developed. The web interface has been enhanced, and relational searches are under development. Currently, over 200 holes of geophysical and LWD data are on-line, and there is also a java data plotting tool on-line.
   - **Core-Log Image Correlation Project.** This is a joint LUBR/LDEO project to integrate core and log image data in FY’97/98. It will allow core orientation in consolidated
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Core sediments. Phase I testing, funded by NERC, took place during leg 173. Phase II testing will take place during Leg 176.

- **Core Log Integration Platform (CLIP).** Splicer is now completed, fully tested and installed on the ship. Remaining tasks include optimizing the interface with the JANUS database. There is now a web page for Splicer, which provides general information about Splicer, and introductory training. Future enhancements will include increased interactivity and training information. The page is at: http://www.ldeo.columbia.edu/BRG/ODP/logging/projects/CLIP/. The next focus of this project will be on the development of Sagan (core-log depth integration), and a similar page will be created for this.

- **Temperature Data Project.** This involves the migration (and reprocessing) of historic temperature data from 9-track to DAT; evaluation of the use of ODP temperature data to estimate rebound equilibrium and thermal gradient; and recommendations for improved temperature logging strategies.

- **Satellite Transfer of Log Data.** Ongoing testing by LDEO and TAMU of the Inmarsat-B system (provided by SeaNet) has been useful and will continue at least through Leg 175. TAMU will distribute an RFQ to procure the hardware and software necessary for a permanent Inmarsat-B system, and it is expected that a permanent system will be installed by the end of 1997.

- **Proponent's Helper.** LDEO is currently developing a web page to help in inserting logging program early in the process, and to assist proponents with completing Site Description forms. Future enhancements will include on-line logging time calculations. The page is at: http://www.ldeo.columbia.edu/BGR/ODP/logging/helper/

Scott questioned whether shipboard Physical Properties Measurements are really necessary, given that logging provides more refined downhole data. Goldberg replied that both are necessary.

**C. Review of FY’98 Schedule**

Baldauf reviewed the operational items related to FY’98 that still need attention including:

- **Leg 175 - Benguela:** The clearance from Angola for sites MAB-1, MAB-2 and SAB-2 is still pending.

- **Leg 178 - W. Antarctic Peninsula:** from the results of the RFP it appears that the ice-vessel “Polar Duke” could be available at the cost of approximately $1.2 M. Only $700K has been budgeted for this item.

- **Leg 179 - NERO/Hammer Drill test:** Baldauf said that the testing for the 12 1/4” hammer was completed in April. There are still two concerns regarding the closing force, which is too great and may cause buckling, and also uncertainly regarding the longevity of the hammer (<5 hours). TEDCOM has recommended a longevity test as well a review of the SDS report. Interactions for hammer-drill have been established with IET, China, Aquatic, Russia and with the Joint Industrial Project (JIP). There is a
possibility that the system will not be ready for testing on Leg 179; hence, other fall-back options need to be considered.

Scott asked whether the Chinese and Russian hammers are new, and commented that, when this project first started, only the Australian (SDS) hammer was available. Baldauf replied that TAMU has been aware of the Russians hammers for some time, but they do not look cost-effective. TAMU is still evaluating the Chinese hammers. Natland asked whether SCICOM needs to consider the possibility of postponing the engineering leg to some other place and time. Humphris suggested that this is really an OPCOM issue and that they should be asked to consider options for Leg 179 that can then be considered by SCICOM if necessary.

**Action Item for OPCOM:** SCICOM requests that OPCOM look into fall-back options for Leg 179 in the event that the hammer-drill test has to be postponed.

Goldberg reviewed the special tools that are planned for the upcoming legs (Appendix 8), and mentioned some critical aspects of the FY'98 logging program:
1) there has been a problem identified with the two older sonic tools. The SDT tool becomes unreliable in slow sediments, and the older tool (the LSS) has been used which does not produce good quality data. The DSI tool was used in slow sediments on Legs 149 and 150, and produced excellent data. DMP had recommended that the sonic tools should be upgraded.

2) Goldberg presented 5 items related to FY '98 deployment changes and their associated costs:
   - The GHMT is scheduled for three legs and a cost increase from Schlumberger is expected of ~$26.4K.
   - DLL is scheduled for two hard-rock legs, but it is suggested that this be replaced by the ARI at an increased cost of ~$57K.
   - Replace the SDT with the DSI (for five legs will cost ~$ 88K).
   - This year, due to budgetary restrictions, two back-up tools from the standard tool string have been removed: the high-resolution natural gamma and a high-powered neutron tool. The costs to replace these back-up tools would be ~$96K for the HNGS, and ~$110K for the APS backup tools.

Goldberg asked for SCICOM prioritization and endorsement of this negotiating position when he meets with Schlumberger in the next month. The tool deployment costs are negotiated annually, and even if there is not money available for these costs yet, it is important to have a priority list.

Klein asked for clarification as to whether these items are doable under the budget, or whether other funds have to be identified. Goldberg explained that there are no funds, but that he needs to approach Schlumberger with a prioritized list of what is wanted so that he can then negotiate the annual agreement. Humphris commented that SCICOM has already stated they want GHMT on the three legs, so covering any shortfall has to be the highest priority. Casey Moore commented that this is really a micro management issue and that Goldberg is best qualified to make the determination as to where the available funds are best invested. **By consensus, SCICOM agrees with the**
prioritization of proposed tool deployment changes for FY'98 as put forward by ODP-LDEO.

Humphris then brought up the issue of the budgetary implications of the increases in the cost for the ice-boat for Leg 178, and commented that, since this is a major issue that potentially affects the science and the technological development within the Program, SCICOM needs to make a decision as to how to cover the cost of the ice boat for Leg 178. SCICOM needs to consider whether funds should be taken out of the Active Heave Compensation Project, or whether this money should come out of other sources. Larson questioned whether SCICOM should just drop the Leg, given the high cost of the science. Falvey said that had been considered, but all the Legs that follow cannot be shuffled up two months in the program, because of weather windows. Falvey also said that other possible projects had been considered that could be fitted in, but there was not a high priority one that was ready. Larson said he felt there was one -- the Somali Basin.

Humphris commented that this has not been a highly rated program. Miller said that getting the ship to drill in the Antarctic has to be viewed as a top priority, and that Leg 178 is the first step. Casey Moore said that once the Legs are scheduled, all stops should be pulled out to support them. PCOM made the decision to drill on a good scientific basis, so it should be done. Larson said he agrees, but when the costs change by such a large amount that it seriously impacts other aspects of the Program, then the possibility of a cancellation should be discussed. Klein suggested that SCICOM look first at where the money could be taken from. Fox said that the solution is to take the money for the active heave compensator and apply it to the ice boat.

Humphris then stated that for the sea-level community, and in the LRP, Antarctic drilling is a very high priority and, if we do not try it, then we are reneging on a large segment of the community and on one of the high priority long-term objectives. If we accept the premise that Leg 178 will go ahead, then it is necessary to look at where else there are sufficient funds in the budget. The only X-base projects where there are large funds are the active heave compensation ($556K), excess operations costs for Woodlark Basin (which means seriously impacting the planned science), JANUS II (which means impacting a project that is already underway), data migration (which is a project that has not yet been started), and publications (which is for developing a model for future publications). Klein asked what the impact of deferring active heave compensation development would be. Humphris replied that it is an important step that is necessary for other technological developments planned for later in Phase III; e.g. hammer drilling, coring in fractured environments, etc., so it is a first-level technological development. Fox stated that TAMU can identify ~$100K that are uncommitted for FY'97 (as Baldauf reported). In addition, he has given instructions to managers of functional centers to look at budgets and balance risk against necessity, and there may be an additional $50-100K coming forward that is uncommitted in this fiscal year. In addition, in the drilling operations side, inventories have been replenished to some degree, so that at the beginning of FY'98, it may be possible to defer up to $100-200K of supplies. Therefore, there could be $200-400K that could be committed either to active heave compensation or to data migration. He added that the active heave compensation market is now much more competitive, and that the prices might come down. RETSCO is the company with which SEDCO will likely want to work with, and it is possible that the project could be accomplished with the funding that might become available from savings. Humphris then
asked Fox to confirm that SCICOM needs to consider the relative priorities of the active compensation project vs. the data migration project, so that they could provide advice on where any available FY'98 funds should be directed. Natland commented that there are 2-3 legs of drilling in difficult environments in the projects under consideration for FY'99, as well as some in the FY'98 schedule, and so active heave compensation is a very important project. It is the one development that everyone agreed would help the entire Program in every aspect of improving core recovery and drilling in difficult environments, and might make DCS unnecessary. Scott asked if an ice-vessel can be replaced by an helicopter carried on the JOIDES Resolution that would find ice so the ship could be moved. Francis commented that there are several items that should be considered, and include weather (fog), number of pilots and mechanics to be accommodated on the ship, fuel storage and cost. In addition, the ice-vessel has to be there in case it is necessary to evacuate the JOIDES Resolution. An ice vessel is required, if the Leg is going to be drilled. Kudrass commented that the active heave compensation would reduce costs in the long term by saving bits, etc. and asked if there was an estimate as to what that savings might be. Baldauf said those types of estimates are premature.

Miller said that postponing the data migration project by one year would allow everything to be achieved, and asked whether anyone wanted to speak out on behalf of data migration. There was no comment. Baldauf asked for clarification that the SCICOM advice is therefore to move ahead immediately with active heave by delaying data migration and that, as funds become available, then proceed with data migration. Humphris commented that in FY'99, the situation may be even worse, and that the priorities, including data migration, will have to be revisited. However, for FY'98, SCICOM is recommending delaying data migration, and that the funds from that project go to active heave compensation. Fox pointed out that there are still some on-going activities related to completing the JANUS project that may require some additional funds. Humphris replied that, if that comes up, OPCOM can deal with it, but that SCICOM needs to make a clear statement as to their priorities being ice-boat, active heave compensation, and then data migration in that order.

SCICOM Motion 97-2-3
SCICOM's highest priorities are the conduct of high quality science and the fostering of the technological innovation necessary to implement the ODP Long Range Plan. For FY'98, SCICOM recognizes the need to support the scheduled Antarctic drilling with an ice vessel. This will require funds beyond those originally budgeted. SCICOM also places highest priority on continued development of active heave compensation. Although SCICOM recognizes that data migration is important, the scientific needs of the program dictate that it is a lower priority. Given the severe financial constraints in FY'98, and the need to balance the priorities for ODP activities, SCICOM recommends to JOI that whatever funds are available from savings in FY '97 and FY'98, and funds originally budgeted for data migration in FY '98, be reallocated to completion of the active heave compensation project.

Proposed: Miller, Seconded: Natland 15 in Favor, 1 Absent

D. Ranking of Proposals Based on Science
Humphris commented that this will be the first time that SCICOM has gone through this process, which must be one of producing a global ranking based only on scientific relevance, and ignoring issues of logistics, geography, weather, etc. OPCOM will deal with logistical and budgetary issues in determining a schedule. It is important that SCICOM look at the proposals in terms of the Long Range Plan. She then proposed that SCICOM hear the reports of the two SSEP Chairs first, then take general questions about their presentations. Then Goldberg should present the overall plans for logging. After that, there will be a general discussion about the science of each proposal by theme, and led by the SCICOM watchdog. After that, the proposals will be ranked on a global basis, and then SCICOM will decide what subset will be sent forward to OPCOM for scheduling.

Casey Moore asked how Site Survey Readiness will be considered during the ranking process; although it is logistics, it determines whether the science can be realized. Humphris commented that this is a tricky issue, but that in their consideration of the science, the SSEPs, who have SSP liaisons, have looked at whether the science is justified from the site survey data. Falvey commented that the idea behind a global ranking was to end up with a global list that will influence the long-range track of the ship, influence site surveys, and can be seen to be addressing the themes of the LRP. It will probably take at least three years to get a comprehensive global list of proposals based primarily on the quality of the science. He reminded SCICOM that logistical and geographical issues have to be put aside.

Humphris clarified that each proposal Watchdog was expected to write a draft response to the proponents that detailed the SCICOM discussion and comments. Since all of the proposals to be discussed had been externally reviewed, SCICOM has to provide advice as to the status of each proposal, and what the proponents would be expected to do next. Tauxe asked why the external comments are anonymous when the Panel membership is known. Humphris replied that the reviews are done by people outside the panel structure, and that EXCOM had recommended they be handled anonymously so as to make the process as effective as possible.

Humphris then reviewed the EXCOM Consensus regarding conflict of interest. Roger Larson (proponent on Mariana-Izu Mass Flux) and Casey Moore (PI on a proposal for a 3D seismic survey in the Nankai area) were identified as conflicted SCICOM members, and Ted Moore (proponent on Paleogene Equatorial Pacific) identified as also in conflict. Humphris reminded these three that they will be expected to leave the room during any discussion leading to a vote, but could be present for presentations and general discussion.

Humphris then indicated that the PCOM Motion regarding ranking procedures has to be modified to be in line with the new global scientific ranking that SCICOM will do excluding logistical considerations.

**SCICOM Motion 97-2-4**

In order to align the voting procedures with the new Science Advisory Structure, SCICOM revises PCOM Motion 96-1-5 and adopts the following three-step voting procedure for purposes of determining a drilling schedule. **Conflicted SCICOM members will be excluded from this entire process.**
**Step 1**: Choose programs to retain for purposes of an integrated global scientific ranking, based on advice from the SSEPS as to their priority and relevance to the ODP Long Range Plan:

**Option 1**: Panel consensus on recommendation of Chair;

**Option 2**: Show-of-hands vote on each drilling proposal, with retention of a proposal for ranking based on 50% or more of votes in favor.

**Step 2**: Rank proposals based on scientific quality and priority. Given X programs retained from the previous step, un-conflicted SCICOM members will rank programs from 1 to X, on a signed paper ballot. After voting, written ranks of each program by each voter will be tabulated and the mean ranking and standard deviation of each program will be calculated. Paper ballots will be retained in the records of the meeting. A list of proposals that SCICOM wishes to be scheduled will then be determined from the ranked list, and will be forwarded to OPCOM.

**Step 3**: OPCOM will then prepare a draft schedule which will be sent to SCICOM for consideration of quality of the proposed schedule as a whole and the budgetary implications. SCICOM will vote by e-mail to accept or reject the schedule proposed by OPCOM, based on a simple majority of votes cast. Rejection of the schedule at this stage dictates the preparation of a new schedule by OPCOM.

Proposed: Natland, Seconded: Moore

15 in Favor, 1 Absent

Note: EXCOM needs to approve this Motion.

1. **Presentation of by SSEP Chairs of High-Priority Proposals (Group I and II)**

   a) **ISSEP- (J. Tarduno)**

   Tarduno commented that ISSEP has a set of high quality proposals to put forward. He briefly presented the proposals grouped into Group I by the ISSEP, which include:

   • **426- Australia-Antarctic Discordance** -- this proposal is to investigate the boundary between different mantle provinces in the Indian Ocean. The drilling strategy is interesting in that they will use analyses on board the ship to make drilling decisions. It has been in the system for a while, and the proponents have been very responsive. It addresses the mantle dynamics theme of the LRP, and brings in a community that has not been represented very much in ODP.

   • **431 - W. Pacific Network** -- this proposal contains two sets of objectives: ION sites in the Philippine Sea and in the W. Pacific; and two sites in the Japan Trench for observatory-type objectives. The Group I designation is based more on the latter two sites, as, although the ION sites are felt important, there are some outstanding questions regarding further testing of downhole seismometers. The Japan Trench sites are by far the most societally relevant of all the proposals reviewed by ISSEP.

   • **445- Nankai** -- this proposal looks at fluid flow processes and builds on previous drilling. It covers themes covered by both ISSEP and ESSEP.

   • **448- Ontong Java** -- this proposal has been highly ranked by previous Panels and addresses a number of questions relating to LIPs. There are some concerns over the site survey data, but there are going to be three cruises in the area, of which two will collect site survey data. The data are expected by mid-1998.

   • **472 - Izu-Mariana Mass Flux** -- this proposal has been around for a while and is to conduct a mass balance experiment at a subduction zone. The Panel felt that this
A type of experiment needs to be attempted in order to being to understand the questions that should be asked, even though some of the external comments were critical.

Regarding the Group II proposals:
- **450- Taiwan Arc** -- this proposal is to try to understand the collisional dynamics of the Taiwan margin. One external reviewer questioned whether anything could be learned by drilling because deeper structures are the key; however, the ISSEP concluded that this was a narrow view and that the proposed drilling could address some testable hypotheses. However, the panel felt that the hydrologic components could be better developed.
- **451- Tonga** -- this addresses a range of problem based on prevails drilling, that include understanding geodynamic controls, deformation processes, how the arc systems originate, and geochemical variations. ISSEP felt that objectives 3 and 4 were of very high priority, and there were a number of questions regarding objectives 1 and 2.
- **463- Shatsky Rise** -- the second of the LIPs proposals. Being smaller than Ontong-Java Plateau it has some advantages; in addition, there is excellent magnetic data.
- **499- ION sites** -- there are some questions as to the Site Survey readiness of this proposal, even though the proponents believe this site can be drilled if there can be some brief surveys from the JOIDES Resolution. ISSEP is strongly in support of drilling this site, although the Panel had some questions regarding the planning for tests of the use of these boreholes.

2. **ESSEP - (T. Moore)**

   Moore indicated that the ESSEP took into account site survey readiness to the degree that, as long as there was enough, or would soon be enough, data to make a final site selection, the Panel would judge the proposals on the basis of science. Moore then briefly presented the Group I proposals:
   - **355- Gas hydrates, Peru Margin** -- this proposal has been in the system for many years. It contains some exciting opportunities, particularly in light of the recent results from the BSR drilling in the Atlantic and the successful operation of the PCS. This is a very different, tectonically active, environment in which fluid flow and high variability in the hydrologic properties of the section will impact the development, and nature of, the BSR. At least half of the Panel felt it is very important to look at this contrasting environment in a BSR-fluid flow regime. The grouping had a split 50/50 judgment between Group I and II.
   - **445-Nankai Trough** -- this proposal is in excellent shape and was strongly supported by the ESSEP.
   - **455- Laurentide Ice Sheet Outlets** -- this proposal is to drill high-resolution transects across the Laurentide Ice Sheet outlets, and looks primarily at two outlets: the St. Lawrence system, and the Labrador Sea from Hudson Bay. There is also a high-resolution sites in a fjord that would be an East coast complement to Saanich Inlet. Although there is still some site survey work needed, it is of very high priority for ESSEP.
465 - SE Pacific Paleoceanography -- this proposal is to reconstruct back to 10 m.y. a longitudinal and vertical transect of major Pacific water masses and boundary currents in high productivity regions. It is an analog to the Benguela Current and the California Current. A site survey cruise has been completed that is reported to have been very successful.

484 - Asian Monsoon -- this proposal looks at the input from the eastern part of the Tibetan Plateau into the S. China Sea. There is oil company data being used in the development of the proposal that has allowed them to set up a conceptual framework of what they expect to find, although there is more site survey information required. This should provide an excellent climatic and paleoceanographic tie to tectonics. Although it may have logistical and political problems, scientifically it is a very nice project.

486 - Paleogene Equatorial Pacific -- this proposal is to look at circulation in the Paleogene in one of the principal wind-driven currents in the ocean. It is not clear whether, during the Eocene, there was an equatorial zone of high productivity, or what the wind systems were doing.

490 - Prydz Bay -- this proposal is the only one of the ANTOSTRAT proposals which were reviewed externally that was placed in Group I. Prydz Bay drilling is the highest priority for both the ESSEP and ANTOSTRAT, as the models suggest that the first ice stream to have reached the ocean would have gone to Prydz Bay, and this would provide the earliest date point. The other Antarctic proposals have other work to be done in terms of site locations. The Panel also felt that the success of all the proposals depends on proving that the drilling strategy works during the drilling already scheduled, and if successful, the other Antarctic proposals will rise in importance.

Regarding the Group II proposals:

448-Ontong-Java and 463-Shatsky -- both LIP proposals would drill through sediments and recover some, and the panel was interested in Cretaceous and Paleogene intervals. However, there are no data available to assess which sites should be cored in the sedimentary section and which should not. ESSEP like the Shatsky proposal particularly because the sediment overburden is much less, and hence the diagenetic alteration of the sediment should be less. A group interested in the sediment have discussed the possibilities with the proponent. Sager does not want to add too much sedimentary drilling to the program, as he feared that a request for too much drilling time would jeopardize his proposal. A Paleogene paleoceanography group will submit a separate proposal for Shatsky drilling.

485 - S. Gateways -- this proposal is to look at the Tasman Rise that blocked circumpolar circulation until the Eocene-Oligocene boundary. It aims to document the history of the opening of this passage and its impact on circulation, thereby addressing both tectonic and paleoceanographic objectives. It was criticized in external review because the tectonic aspects were neither adequately developed nor could be achieved, so the proponents have responded with an emphasis on the paleoceanographic objectives, and removal of the tectonic objectives. The ESSEP felt that the proposal can be done a little better, although they are very supportive of the project. ESSEP expects the proponents to come back with a good, revised version.
McKenzie asked why 355-Peru Margin got a 50/50 split vote. Moore replied that there was some disagreement on whether this was the best place to address the problem, but the scientific potential of the gas hydrate project was considered very highly. In addition, it was discussed jointly with the ISSEP as there is some overlap in the objectives, particularly the tectonic objectives. Moore indicated that he felt that those who grouped it as a Group II proposal were concerned about site placement.

Larson recalled that Van Andel had investigated the inclined sediment wedge at the equator using DSDP cores that demonstrates increased productivity during pre-Miocene times, and asked how Proposal 486 built on that work. Moore indicated that the data end at the Eocene, but the data that exist suggest no obvious sediment mound in the Eocene at the paleo-equator, so can only go back to the Oligocene.

Larson asked about the relative importance of the currently scheduled program (Leg 178) and Prydz Bay. Moore said there was a long debate over this, but the first to be drilled has already been decided. Larson then asked what is missing given that several sites have been drilled there. If the answer is poor recovery, then why will another Leg be different. Moore pointed out that the location of the proposed sites are in deeper water and in sediments of different lithology. Kudrass said that the proponents claim that they are able to trace the drift site reflectors to the slope sites, but it is not clear that is the case in the proposal. This is important for the proposed correlations. Moore stated that ESSEP agrees with this, and consequently, have scheduled a meeting in the fall with representatives of ISSEP, ESSEP and the proponents to look at the seismic data. This is part of the new mentoring role that the SSEPs are taking.

3. Logging Considerations - (D. Goldberg)

Goldberg reviewed the process required to produce a logging Prospectus, and commented that this was particularly difficult this year as there were only two months to do so. However, this should be better in the future. Fifteen proposals were reviewed by ODP Logging Service scientists, logging plans were compiled and reviewed by the BRG chief scientist and the proponents. These plans are shown in the table in Appendix 9, and Goldberg concluded that all proposals have objectives that can be addressed by the existing technological and available tools.

4. SCICOM Discussion and Comments by SCICOM Watchdogs

Humphris started the discussion, presenting overheads with proposals in Groups I and II of the SSEPs differentiated according to the theme in the LRP that they address. Falvey reminded SCICOM that the outcome of the program will be evaluated yearly against the objectives stated in the LRP. Humphris said that SCICOM presentations will take place following an order related to the LRP aspect that the proposals address.

(Note: the Minutes do not include the detailed descriptions of every proposal given by the SCICOM watchdogs, but focus on the discussion).

426-Australia-Antarctic Discordance -- Klein said that this proposal addresses some very important LRP questions relating to mantle dynamics that are different from the questions being addressed by the LIPs proposals. The basic idea is that, on the basis
of dredged samples, it was recognized years ago that there is a fundamental boundary between two different mantle compositions: Indian and Pacific. Based on this, and some off-axis dredging, the proponents have developed some plausible hypotheses as to how the boundary may have migrated over time. A net of holes is needed to test the different hypotheses for migration, and so the suggested approach of using geochemical indicators at sea as a guide to where to drill is very logical. The proposal is very mature, and the external comments were very positive.

Humphris asked Klein to detail how fundamental this problem is to geochemistry. Klein said that this location is unique in the world, and the problems addressed are of interest to both geochemists and geophysicists. Larson said that he likes the general strategy, but questions what fundamental question is answered by defining how the location of the boundary has migrated. Klein replied that the proponents tried to address this in terms of how the different hypotheses would provide information on depth of circulation, mantle flow at certain rates in different directions, etc. Scott questioned whether drilling is the best tool -- could an ocean bottom gravity survey provide the same information? Klein responded that this is not that kind of problem, but rather a geochemical manifestation of differences in mantle composition. Pearce commented that he is surprised that the boundary is so sharp whereas, in other locations where two domains are interacting, there is mixing. Klein replied there is some transition that occurs within 1°, but the proposal does not aim at narrowing the boundary to a very fine scale on the order of kms. Tarduno commented that the velocity of the propagation is 25 mm/year, and it is fundamental to people in the mantle community to find about the sharpness or lack of sharpness of this boundary. Natland commented that this same strategy was used on Leg 83 using a shipboard XRF. Tamaki asked if the proposed drilling plan will address the morphology of the boundary. Klein replied that drilling will not be able to define the fine undulations of the boundary, but rather will address questions relating to larger-scale mantle flow models. The shape of the boundary has important implications for mantle processes.

463 - Shatsky -- Casey Moore outlined the essential aspects of this proposal. This proposal outlines a clear set of objectives that can be tested by drilling. The sites are well located and supported by good site surveys. The external reviews pointed out that Shatsky is not as big as other LIPs. However, it is laid out along a trace so that, in effect the oldest to youngest portions can be sampled by drilling along its length.

SCICOM agreed that the compositional variation and timing of Shatsky Rise magmatism can probably be measured by the proposed northeasterly drilling transect -- a type of offset drilling strategy. Scott, regarding the size issue, commented that, if LIPs are like ore deposits, then studying a little one is much easier that studying a big one because it can be sampled and all the characteristics can be seen in a small area. How can something as large as Ontong-Java be adequately sampled? Tarduno said this was an important point and that the proponents had tried to address the advantages of drilling a small LIP, but the community had not agreed. There is concern that the processes that control the creation of crust 20 km thick may not be the same as those that create crust that is twice as thick. It is therefore likely that different things will be learned by drilling Shatsky than by drilling Ontong-Java or Kerguelen. Humphris then
suggested to move on to Ontong-Java, and then have a general discussion about what are the goals of LIPs drilling.

448-Ontong-Java -- Natland reviewed the proposal and indicated that, in his view, the proposal as it stands, has an emphasis on sorting out two major age provinces. Natland commented that this proposal is well thought out, with a clear and direct drilling plan, and it was well received both by reviewers and the Interior SSEP.

Natland then presented an overview of the reasons for drilling LIPs in general, and the input from the Woods Hole workshop. He reviewed the advantages and disadvantages of each of the major LIPs that has been drilled (or considered for drilling) by ODP (see Appendix 10). He concluded that overall, Shatsky is very competitive with the Ontong-Java proposal, and that it has a testable geodynamic hypothesis, it is the oldest, and will also provide the Jurassic-Cretaceous sediment history spanning the large LIP, climate-modifying interval. He recommended that both Shatsky and Ontong-Java should be seriously considered for scheduling.

Humphris added that the WHOI workshop recommended a strategy of drilling a few LIPs during Phase III, in order to determine the best location for a hole to be drilled in Phase IV. The question that needs to be considered is the range of LIPs that need to be drilled during Phase III. Tarduno commented that he believes that the present Ontong-Java proposal addresses the big questions with their array of sites. He also felt that having an on-land section is a benefit rather than a disadvantage, as presented by Natland, as it can add to the science, but does not preclude the need to drill the large feature. Natland agreed that regional coverage is needed. Pearce said that the scientific community would be more excited by Ontong-Java rather than by Shatsky Rise, but he questioned whether the Ontong-Java drilling strategy is optimized. For example, if there were holes drilled into the sediments on the margins of the Plateau, it might be possible to get a much better idea of the age range; if the center of the plateau was drilled without coring through the sediments, it would leave more time to get deeper. Tarduno responded that drilling through the sediment apron might give ages, but would provide no means of estimating volumes. Tauxe asked how drilling the uppermost surface of a structure which is 40 km thick will provide an answer to the fundamental questions that are so exciting about LIPS. Tarduno replied that based on the age model which can be obtained, modeling can be done. Humphris added that we know so little about these events that any information is a step forward in learning about major events.

431-West Pacific Seismic Network -- Tauxe reviewed the rationale for choosing this site locations for both the ION holes, and for the Japan Trench sites. The purpose of the sites in the Japan Trench (JT) is to study slow earthquakes and the problem of aseismic slip. Tamaki added that this type of earthquakes was detected in Japan by GPS over a period of one day and are related to aseismic slip. In general, slow earthquakes are observed in GPS but not necessarily by the seismic network. Casey Moore indicated that some slow earthquakes, however, produce tsunamis; e.g. the 1992 earthquake in Nicaragua. Goldberg added that the strain gauges scheduled for the Japan Trench sites are large and there may be a problem related to deploying them through the drill pipe. Humphris pointed out that is an operational issue and should be considered by OPCOM.
Raymo commented that she felt that the science to be accomplished was not clear, so it is hard to determine "bang for the buck" in terms of science. Humphris responded that PCOM had agreed a long time ago that, as the ship works its way around geographically, it would drill holes as was possible for ION. The real question is what is happening to these holes, and when is it likely that a broadband seismometer will be deployed in one of them. Becker commented that there are plans by both US and French groups to conduct some tests of the seismometers in the next year. Humphris commented that SCICOM is in agreement that the science is a high priority, but the issue is what happens if it is determined that buried seafloor seismometers are actually better than a downhole installation. Larson commented that SCICOM needs to confront a fundamental problem that it is not known whether drilling these holes will do the scientific community any good. We have already drilled one hole, and there is another on the schedule -- so how many are we going to drill not knowing more than we do now, or should we wait until we get more results? Becker stated that ION has prioritized six sites as their top priority. The general consensus was that ODP consider drilling ION's highest priority sites with the expectation that the concept will be proven, but additional sites would wait for a demonstration that borehole seismometers are contributing to the achievement of the stated scientific objectives.

Scott commented that a borehole seismometer was installed in the Sea of Japan on Leg 128, and asked whether there is sufficient data from that to determine the viability of the tool. Becker pointed out that the real issue is a comparison of data from a buried seafloor seismometer with those from a downhole seismometer, and that experiment would happen very soon. Casey Moore pointed out that the Japan Trench sites are a different kind of instruments to go in the holes. Humphris noted that is why the SSEPs separated out the Japan Trench sites from the two ION sites in their groupings.

499-ION -- Tamaki presented this proposal and the reason for the selection of this site for the GSN. It is a straightforward proposal, and the proponents claim they will be ready to install a seismometer by 1998, which could be done with a wireline reentry system.

Humphris pointed out that much of the discussion already had for the W. Pacific Seismic Network ION sites also applied to this proposal. SCICOM recognized that the Equatorial Pacific is one of the high priority sites defined by OSN/ION and, as such, should be drilled.

450-Taiwan -- Lagabrielle summarized the important aspects of the Taiwan arc-continent collision problem, and indicated it represents a unique opportunity to study a rare collisional system. Two of the external evaluations were very positive, whereas the third review, from a person familiar with the deep structure of Taiwan, expressed concern about the possibility of distinguishing between the two different hypotheses based on the existing data. His personal opinion is that the objectives are good and the sites are appropriate, but the tectonic context still needs to be better clarified.

Scott questioned the appropriateness of spending so much money on something that does not have broad application given that this is a rare example. Casey Moore commented these situations are not rare, and that Alaska and W. Canada are made up of parked arcs. He also pointed out that the objectives are very clear, whether this is a
normal faulting boundary or a thrust boundary. Humphris clarified a misperception that site survey work was needed - this proposal is ready to drill. Lagabrielle added that there is a third hypothesis, which is that of normal faults developed over a thrust. Tarduno said that the ISSEP thought the tectonic components were well represented, but they would have liked to see the hydrological aspects better developed. In summary, SCICOM was supportive of this proposal and recognizes that it represents an unique opportunity to study the processes along a developing collisional complex. However, to maximize the potential of better understanding the faulting/fluid flow relationships, a more detailed hydrologic research plan should be included in the proposal.

472 - Izu Mariana Mass Flux -- Natland presented the overall objectives of this geochemical mass balance proposal, and pointed out that drilling presents the best opportunity of starting to address this problem. He also commented that he agreed with the priorities for a single leg of drilling, but questioned whether this should be considered for more than a single leg in order to get the volcaniclastics signature. This is a global process that is continuously going on, so represents a very important problem to attack with drilling.

Klein commented on the issue of what information would be gained from the fluid chemistry, and said that Plank had replied to that concern by pointing out that there is lots of geochemistry that can be done independent of the fluids. Scott commented that with two holes into the incoming plate, you cannot be sure that all the components that need to be part of the mass balance equation are being seen. In addition, can you be sure that the sediment is getting down into the zone of melting? Humphris responded that there is a need to attempt to get some baseline data on the composition of the down-going material in a situation where all of the sediment appears to be going down the trench. Klein pointed out that it is the comparison of the Izu and Bonin that might allow differences in what is being subducted to be correlated with differences in the mass balances. Pearce commented that he is very supportive of the proposal, but whereas BON-8A is directly outboard of the Izu section, there is no outboard hole of the Mariana section, and this is the section that has fluids coming out of the serpentinite diapirs, so one concern is there may not be very good control on the Mariana section. He would like to see some equivalent of Site 452 so that one can get an idea of what fluids are going down the Mariana section. Klein said that it is very easy to criticize this type of proposal because it is so ambitious, and is getting at the issue of the creation of continents and the myriad of difficult processes that occur in subduction zones, so there will always be something to point to that is needed. She further suggested that the community has wanted to do such an experiment for ten years, and it is time to give it a try. Pearce pointed out that if you are going to do a complete mass balance, it is important to know something about the fluids coming through the serpentinite diapirs as it is the only place where you can document the flux between the arc and the trench. Hence you need a hole directly outboard of the Marianas, and not where the holes are presently sited. Natland commented that Hole 801C is the classic bird-in-the-hand, and looks like a good chance to get into rocks that are believed to be the same as those going down the Mariana Trench, so it is not important that they are a little far off.
451-Tonga -- Pearce described the objectives of this proposal, and said that this area is similar to Izu-Mariana as a case study for the investigation of subduction fluxes and processes, away from complications of continental crust. The two areas are different in terms of geodynamics, subduction input and output, and both are needed to obtain the full picture. The proposal is in a mature state, and has an excellent site survey. It has previously been ranked as 3rd priority by both LITHP and TECP, and was ranked 9th by PCOM. The proposal was then revised before it went to the SSEPs. He said that two of the external comments were good and two excellent. The Interior SSEP agreed with the importance of objectives 3 and 4 (the flux objectives), but it questioned some aspects of objectives 1 and 2 (the deformation objectives). As a result they put it in their Group II, rather than Group I. The proponents then provided a response that indicated they felt the deformation objectives were valid. Pearce's view is that objectives 3 and 4 (and to some extent 2) are very important science. More controversial aspect are objectives 1 (and to some extent 2), and he agrees with the ISSEPs that this is not of such high priority. However, objective 1 involves the same sites as the other objectives, so there is no difference in the proposal whether these objectives are included or not, hence objectives 3 and 4 should be considered the primary drivers of the proposal and, on that basis, it is Group I science.

Larson commented on the fluid aspects, which are complicated by the geodynamic situation in the north. There is the Pacific plate being subducted, and then there are two potential tectonic overlays -- one is the Louisville Ridge, and the other is the Samoan hotspot, the lateral extent of which is not known. Hence these two contaminants potentially influence the geochemistry of the northern arc sites. Pearce replied that these have very different geochemical signatures, and it should be resolvable. Casey Moore shared the view with regard to the tectonic objectives, and suggested that they really need a transect with a seismic stratigraphy. Tamaki asked about the comparison of this proposal with the Izu-Mariana in terms of flux objectives. Pearce replied that a major difference is the effect of the Louisville Ridge which is migrating from north to south, a tracer is being put into the arc system in the form of volcanocgenic sediments, so the effects can be seen as the Ridge migrates down. There are also distinct differences in the chemistry between Tonga and Mariana-Izu. Raymo asked which of the two is more important. Pearce suggested that perhaps, at the moment, the Mariana-Izu is more developed because the back-arc and the forearc arc work is being done, and hence to get the full picture, it is necessary to look at the subducting plate. Humphris said that PCOM ranked Mariana-Izu as 4th and Tonga as 9th. Pearce suggested that, at Mariana-Izu, we are one step away from understanding the whole system, whereas, at Tonga, we are two steps away. However, he cautioned against neglecting this, as then there would be only one case study. Natland stressed the strength of the links between fluxes and geodynamics in this proposal, and this work has been supported by both the TECP and the LITHP. Larson said that another variable that makes this area different is that the back-arc system is more complex geodynamically relative to Izu-Bonin. There is a back-arc spreading system well developed in the north, which tapers to essentially nothing to the south. Pearce responded that the proponents have tried to address this question in one of their objectives.
445 - Nankai -- Scott discussed the two major themes and objectives of this proposal, and stressed that it links the structural fabrics developed in the deformation front to the behavior of fluids. The proposal is for two legs to drill two transects. A first leg would drill the holes and do LWD; a second leg would be to install CORKs. The general feeling of the SSEPS and external comments is that the second leg is not as well developed, and that realistically the proponents are looking at a one-leg proposal. They therefore have a contingency plan to complete the highest priority work on the first leg. There have been three previous legs to this area, with the best site being Site 808. Experience there with hole stability suggests that LWD is clearly necessary. Scott's view is that this is exciting science, and a lot can be accomplished in one leg.

Kudrass asked how this compares to the Barbados. Scott replied that Nankai is seen as one end-member type of accretionary wedge; Barbados is a carbonate environment, Nankai is siliciclastics. Scott also pointed out that this proposal has a deep hole potential. SCICOM agreed that Nankai is an important end-member accretionary prism that should be drilled and will provide an interesting contrast to Barbados. Natland pointed out this was an area of interest to the Western Pacific Panel ten years ago, when there was a very complicated two-leg proposal, of which only one leg was done that was partially successful. However, now there are a lot more tools available, including LWD, that can be applied to this problem, and that make this a doable leg that will produce exciting results. Natland pointed out that there is an issue of the Kuroshio Current, but that would be a concern that OPCOM will have to confront.

355 - Peru Margin Gas Hydrates -- McKenzie reviewed the scientific importance of gas hydrate theme as identified by SGPP, PCOM and by the LRP, as well as the gas hydrate drilling successes of legs 141, 146 and 164. There were four external comments were very positive and unanimous in their support.

Klein asked why, if the problem is so important, did the SGPP review suggest, for each of the objectives, there may be better locations that could be chosen. She said the real issue is that SCICOM needs to consider the specific proposal in front of them, not just the general importance of the gas hydrate theme. McKenzie said that the proponents are interested in the tectonics of the region, the links between uplift and the sites of gas hydrate formation, and the pore fluids in this region. McKenzie said that her view, and one expressed by some of the external comments, was that there may be too much in this proposal to do in one leg, and that what is needed is a focused effort to expressly study gas hydrates. Humphris commented that there are some specific questions that have come out of the results of Leg 164, in particular the geochemistry of formation of gas hydrates, and the constraints on the hydrate stability field. SCICOM should consider whether this proposal really builds on Leg 164. In addition, SCICOM should bear in mind that there is a recommendation on the table for the formation of a gas hydrate PPG. McKenzie replied that this is the right location, these are some excellent proponents, but perhaps the proposal is not quite the right one in terms of its objectives. A PPG should develop a more focused plan of the gas hydrate part. Scott pointed out that one of the external comments had pointed out that the proposed holes would not test the fundamental questions about gas hydrates that they are proposing to answer. He wondered whether this was a function of the proposal having been written before Leg 164, or whether these questions cannot be solved at the Peru margin.
Humphris pointed out that this proposal has been revised since Leg 164, but it is not clear that the proponents have really built on the results from that leg. Hodell suggested that perhaps the sites on the Peru Margin are not in the best locations, but other sites could be chosen.

Ted Moore reiterated that the ESSEP was split in its prioritization of this particular proposal, and that they took into account some of the site location concerns because they are important in terms of whether the problems can be addressed. This influenced the Panel's view as some felt there was some work that could be done to improve the site locations. Kudrass pointed out that the tectonic environment is distinctly different from Leg 164, so there is a chance to study gas hydrates in a very different and dynamic environment where there is the possibility of learning more about gas hydrates than in another environment similar to the Blake Plateau. Miller suggested there are two approaches that SCICOM could take: one is a fostering approach where this could be got ready for drilling by refocusing the objectives; the other is that this proposal is not ready and should not be drilled. Natland felt that SCICOM may be trying to recast this proposal as a geochemistry proposal, but at least one of the proponents is a geophysicist interested in the broad relationships between features that are mapped and the makeup of the sediments. Scott commented that there appears to be two proposals here -- a tectonics proposal and a gas hydrates proposal -- that may not be linked. Perhaps SCICOM should look at this as two proposals and judge them independently. Humphris replied that SCICOM has a proposal in front of it to consider, and that SCICOM can certainly go back to the proponents and make suggestions as to how the proposal should be refocused. However, for the purposes of ranking, SCICOM has to rank the proposal on the table. Ted Moore commented that the SSEP and the external comments were in agreement that the fluid flow and gas hydrates aspects are the strongest part of the proposal.

455 - Laurentide Ice Sheets Outlets -- Raymo said that this is a well thought-out, excellent proposal to look at the causes of ice sheet instability that result in major climatic changes on time scales as short as decades. The site locations are very well placed, and complement other work done in the Atlantic. It has strong, positive reviews from the SSEP and from the external comments, and it should be a high priority for drilling when the ship returns to the Atlantic.

Hodell agreed and pointed out that it takes a different approach from typical oceanographic proposals that tend to focus on the distal parts of these systems. It is a link between traditional glaciology studies on land and the deep sea record. Raymo added that it is also merging two disciplinary groups, one of which has not been part of ODP. Raymo and Hodell agree that it is very innovative. Humphris noted that two external comments -- one of which was this would be a good correlation with the IMAGES high-resolution cores but that there did not seem to be a collaborative effort. The other was that they were uncertain if the research needs the long records that separates ODP from conventional coring. Raymo responded that the IMAGES group are coring there, and will no doubt be involved in the shipboard party. However, one thing that was not included in this proposal, but that would make it outstanding and make the ODP aspect special, would be to go beyond the Brunhes-Matuyama boundary to step
into the 40 k.y world when there was a very different ice sheet situation. She recommended that the holes be drilled deeper to get back into the early Pleistocene.

490 - Prydz Bay -- Kudrass reviewed the objectives of this proposal which are the same as those of the Antarctic Peninsula. He said the science proposed here is very important to the ANTOSTRAT effort, but he felt that SCICOM should wait for the results of Leg 178 before going back to this region.

Miller agreed with Kudrass that this is really important science, and that we need to get a ship there. Prydz Bay is probably the best location of the five proposed for drilling. However, the strategy of drilling the drifts and correlating them back is very risky. There is a Leg going out there, and it would be prudent to wait for those results. If we want to be aggressive at going after a high priority in the LRP, then we should go ahead. If SCICOM stepped away from this now, we would not be fulfilling the LRP.

Humphris indicated that one thing that SCICOM can do is, apart from ranking this on the basis of the science, it can advise OPCOM how we would like its scheduling handled. Hence, the issue of whether to wait or not should not influence how we rank the science of the proposal. Tauxe and Larson asked if the science proposed here is more important than that to be drilled on Leg 178. Natland replied that Leg 178 was the first one in the ANTOSTRAT strategy which was based on when the different proposals would be ready and where the ship was likely to be. Prydz Bay was always stated as highest priority.

465 - SE Pacific Paleoceanography -- Hodell described the goals of the proposal, and commented that it addresses fundamental scientific questions. It is a low risk project, and will provide first-rate paleoceanography. It can be seen as an extension of Leg 138, which had phenomenal results. All of the Panel and external reviews agreed that this proposal addresses many of the highest priorities of the LRP. The first order objective is to study deep-water circulation and chemistry, the second is the dynamics of the atmosphere and upper ocean, and the third is the land-sea connections. There are two legs of science in the proposal, but the proponents have not yet prioritized the science for a first leg, as they have only just returned from their site survey cruise. The proposal has important links to other global geoscience initiatives, including PAGES, IMAGES and MESH.

Miller agreed that this is a great proposal and is definitely worth drilling. He commented that, because of the ages and thickness of the sections, it would not be directly comparable to the Ceara Rise cores. He added that the Chile Rise sites have to be approached cautiously because of the possibility of downslope transport and turbidites. Hodell replied that the piston core evidence from the site survey cruise showed no evidence of turbidites in the late Pleistocene section at two of the sites, but that the third site showed evidence of turbidites. Lagabrielle asked why there is no reference to data from Leg 141, where sediments were recovered at six sites. Raymo said that it is probably because the objectives were very different, and that the sediments were not triple-cored and therefore not suitable for the kind of study proposed here. Natland asked how this proposal rates against the other paleo-proposals with very different objectives in terms of their relative importance; i.e. what is the "bell-ringer" in this proposal? Hodell replied that the "bell-ringer" relates to the global array of
paleoceanographic sites that are available to reconstruct climate change in three dimensions. There is basically no paleoceanographic information from the SE Pacific. Hence, this proposal fills a critical gap in the global array of ocean drilled sites needed to reconstruct global climate change, the EBC in the South Pacific, and deep (CPDW) and intermediate (PDW) water mass exchange between the Pacific and Antarctic. Raymo agreed and confirmed that, for those working on understanding the details and processes of long-term climate change and ocean circulation, this is a very important proposal. Humphris reminded SCICOM that, at the August 1996 PCOM meeting, this proposal was very highly regarded but, because it was outside the geographic area of operations, PCOM decided not to include it in the Prospectus. SCICOM viewed the proposal as being well balanced and appealing to a wide audience in the paleoceanographic community by addressing important questions on orbital, suborbital, and tectonic time scales.

486 - Paleogene Equatorial Pacific -- Miller described the background to this proposal and past workshops on past warm climates, and then presented the objectives of the proposal. He added that many of the proxies needed to address the objectives are done on carbonates; however, the CCD was shallow in the Pacific in the Eocene and so, if you drill a site on 55 Myr old crust, there will be carbonate for about 5-6 Myr, and then you will run out of carbonate. It is possible to design a strategy of stacking sites to get a reasonably complete time series, and it seems that is what the proponents plan to do, although that is not the emphasis of the proposal. Miller feels that the science proposed is very important-- and that there is even more that can be done beyond that spelled out in the proposal. He said he does not feel this is a two-leg program, at least initially, because the very closely spaced sampling interval is not needed to address the first-order questions. He would prefer to see Phase 1 and 2 drilling sites combined into a coherent drilling program for one leg. Miller's view is that this proposal should be drilled if ODP is serious about understanding past warm climates, for which SCICOM has set up a PPG.

Natland commented that he did not feel the hydrothermal objectives were well based, and it is not clear what the net signal would be in the sedimentary record from changes in hydrothermal activity. Miller agreed that the hydrothermal work was not well-based, but that the proposal still stands and is as important without the hydrothermal work. Scott commented that hydrothermal fluxes have been monitored for years so it can be done -- but not using silica. Raymo supported Miller's comments re: the carbonate work, and noted that, if this leg goes out, there will be many people out there addressing these aspects, even though they were not emphasized in the proposal. Humphris asked how this proposal fits in with the mandates of the PPG that was just set up. Miller replied that the PPG will identify the next area which should be drilled, but this is a fundamental starting point. Humphris asked whether the community has already identified this as a critical area. Miller responded that Pacific Paleogene is a very difficult area -- the very first records were yielded by Leg 145, and this is the next step.

485 - Southern Gateways -- Raymo described the science of the proposal. She said found the proposal rather weak on supporting information; e.g. there is no discussion of
existing DSDP sites in the area. It received a very critical review, in response to which
the proponents eliminated sites and added another, which was not discussed in detail.
Although the science may be exciting and eventually will produce a good proposal, the
basic background to assess this is now lacking.

Humphris said that she tends to agree, and that in their response, the proponents
indicate that they plan to rewrite the proposal. They changed the focus of the proposal in
their response letter, and that needs to be well substantiated in a revised version. Raymo
also added that one question asked by a reviewer that she would also ask is why the
hypotheses outlined could not be addressed by scheduled drilling programs east and
west of the (e.g. Leg 182, Leg 177, and Leg 181) Tasman Sea. Miller agreed and he
added that he found lacking any discussion for what markers could be used to determine
that the two land masses had separated. Although they indicated nannofossils will be
used, this needs to be better developed. Hence, a new proposal needs to address these
specific issues, as well as present a more thorough discussion of the hypotheses being
tested (including historical background on the subject), and of the data from existing
DSDP sites in the region as an indication of what may be learned by redrilling near these
sites.

484 - E. Asian Monsoon -- Raymo said this is a very exciting proposal, and this is
reflected by the positive comments of the reviewers, panels and herself. She described
the objectives and strategy of the proposal, and commented that it will make a
substantial contribution to tracking the long-term history of the monsoon on a number of
timescales, and understanding links between climate and tectonics. She said that there
are piston cores in the South China Sea with Holocene records.

Klein asked whether any of the existing cores in other areas of the N. Indian
Ocean address any part of the problem. Raymo commented that there has been no
drilling with these objectives on the Bengal Fan, but there are three old sites in the N.
Indian Ocean that did not have climate objectives, and there was an Arabian Sea leg
that produced the data for what is known about the long-term history of the monsoon
belt (which is not very much). Ted Moore said that the input of detritus is much later in
the west part of the plateau compared to the east part. Casey Moore asked if it possible
to separate the effects of sea level and climate in this setting. Both Raymo and Ted
Moore replied that sea level changes might affect the sedimentary budget, but not the
reconstruction of SST, or the proxies of wind intensity or upwelling. Raymo mentioned
that a small group had looked at some of the seismic and piston core data from the area
to determine whether there could be better sites for this project, but they concluded that
all of the chosen sites are located in the correct places. Humphris asked how this
proposal fits with the PPG plan, and Raymo answered that this is a great way to start
understanding links between climate and tectonics. McKenzie said that she also felt it
important that this will provide a link with the continental tectonics and structural
geologists community working in the Himalayas, so it will reach out to a large
community.

5. Ranking of Proposals on the Basis of Scientific Contribution to the ODP LRP

Humphris then asked the two SSEP Chairs to make a short, final summary
statement as to their Panel's priorities. Following their comments, Humphris then asked
Larson, Ted Moore and Casey Moore to leave the room, as the ensuing discussion would lead to a ranking.

Humphris reviewed the procedure: SCICOM would decide on a list of proposals to retain for ranking, then rank them, and then determine the list to be sent to OPCOM for consideration of scheduling. The proposals from that list that are unable to be scheduled will be retained by SCICOM for consideration next year, and will not be sent back to the SSEPs for re-review. Those not sent forward to OPCOM will be sent back to the SSEPs and to the proponents with suggestions for improvements, a change in emphasis, etc. Humphris presented the list of 11 Group I proposals that had been discussed in detail, and asked whether any should be removed from the list. There was a general discussion of whether the gas hydrates proposal should be retained. All agreed that the topic is important, but some questioned whether this was the right proposal with the right emphasis. Pearce suggested that it be retained and sent for ranking, with the message that the topic is important. Humphris reminded him that SCICOM is now ranking proposals, not topics. She then recommended that it is left in for ranking purposes, which was passed by consensus. Raymo commented that for proposals 431 - W. Pacific Network and 490 - Prydz Bay, the possibility of scientific success is going to be judged on experiments that have not yet happened, and their scientific merit is dependent on these experiments. Humphris commented that 431 is a difficult case, because it depends on which part of the proposal is being considered. The Japan Trench part of the proposal is not dependent on other experiments, and the Japanese proponents are already designing and building the instrumentation to be installed. Prydz Bay should be judged on the science, and then SCICOM can give advice to OPCOM as to how it should be handled. Natland reminded SCICOM that this is a global scientific ranking according to LRP, not just for FY '99, and he thinks that it is possible to rank the science, adding a footnote qualifying that ranking with constraints based on whether the strategy works during Leg 178.

Humphris recommended that every proposal in Group I be retained for the global scientific ranking, and SCICOM agreed by consensus. SCICOM then considered Group II proposals. Humphris commented that the one proposal that the previous discussions indicated needed a major revision was 485 - S. Gateways. SCICOM agreed to omit it from the ranking by consensus. Natland said that 499 - ION should also be excluded at this time given that there is no survey, and it is not clear exactly where it is going to be. Tamaki said that the ION site is very important for the global network, and so he favored retaining it in the ranking. Humphris requested a vote on whether to retain Proposal 499 in the ranking. The proposal was retained by a vote of 6 in favor, and 5 against. Pearce commented on the Tonga proposal and suggested that parts of it really make it a Group I proposal. Humphris also suggested that there is an issue of consistency in handling of proposals during the transition from the previous Advisory Structure to the new one. Tonga was in the Prospectus last year, and it was ranked joint 9th. In terms of demonstrating that the Panels are being consistent, Humphris recommended that it be included in the ranking. Scott agreed, and commented that, to some extent, there is a blurring of Groups I and II, so perhaps they should all those left should be grouped. It was agreed that all the remaining proposals should be included.

Humphris raised the issue of splitting the W. Pacific Seismic Network into two, separating the ION sites from the Japan Trench sites. Tauxe commented that the ION
sites should be further split because the Philippine Sea site is really exciting, so perhaps this should be split into three. Humphris commented that she does not know enough about the ION priorities in terms of sites to choose one over the other. Natland said that in general, he is opposed to splitting sites in proposals, but he is willing to consider this one, as there seems to be a fundamental difference between two types of sites. Ellins pointed out that both WP sites are ranked in the top six of the ION sites; however, one has a cable that will connect it to land, so perhaps that is a priority. Humphris pointed out that PCOM has stated that drilling ION sites is a high priority, and that it would try to do them on a mini-leg or add-on basis, so whether ranked together or separately, the idea is that these would get drilled as scheduling allowed. Hence, the division should be on the basis of ION vs. Japan Trench, and not divided further. SCICOM then agreed by consensus to include the following 16 proposals in the global scientific ranking:

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Title</th>
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<tbody>
<tr>
<td>426</td>
<td>AAD</td>
</tr>
<tr>
<td>431A</td>
<td>W. Pacific Seismic Net.-Japan Trench</td>
</tr>
<tr>
<td>431B</td>
<td>W. Pacific Seismic Net.-ION sites</td>
</tr>
<tr>
<td>445</td>
<td>Nankai Trough</td>
</tr>
<tr>
<td>472</td>
<td>Izu-Mariana</td>
</tr>
<tr>
<td>448</td>
<td>Ontong-Java</td>
</tr>
<tr>
<td>355</td>
<td>Peru Margin Gas Hydrates</td>
</tr>
<tr>
<td>455</td>
<td>Laurentide Ice Sheets Outlets</td>
</tr>
<tr>
<td>465</td>
<td>SE Pacific Paleocanography</td>
</tr>
<tr>
<td>484</td>
<td>E. Asia Monsoon</td>
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<tr>
<td>486</td>
<td>Paleogene Equatorial Pacific</td>
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<tr>
<td>490</td>
<td>Prydz Bay</td>
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<tr>
<td>499</td>
<td>ION Eq. Pacific Site</td>
</tr>
<tr>
<td>451</td>
<td>Taiwan Arc-Continent Collision</td>
</tr>
<tr>
<td>452</td>
<td>Tonga</td>
</tr>
<tr>
<td>463</td>
<td>Shatsky</td>
</tr>
</tbody>
</table>

Humphris then called for a vote on the ranking to be conducted on signed, paper ballots. She reminded SCICOM members that they are voting on the science for ODP, and not as institutional, disciplinary or country representatives. SCICOM members then assigned a vote from 1 (highest) to 16 (lowest) for each proposal on the list. The results of the voting are the following:

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Title</th>
<th>Rank</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>484</td>
<td>E. Asia Monsoon</td>
<td>3.9</td>
<td>3.2</td>
</tr>
<tr>
<td>426</td>
<td>AAD</td>
<td>5.3</td>
<td>2.7</td>
</tr>
<tr>
<td>445</td>
<td>Nankai Trough</td>
<td>5.9</td>
<td>2.6</td>
</tr>
<tr>
<td>472</td>
<td>Izu-Mariana</td>
<td>6.2</td>
<td>4.5</td>
</tr>
<tr>
<td>455</td>
<td>Laurentide Ice Sheets Outlets</td>
<td>6.2</td>
<td>3.9</td>
</tr>
<tr>
<td>490</td>
<td>Prydz Bay</td>
<td>6.8</td>
<td>2.9</td>
</tr>
<tr>
<td>448</td>
<td>Ontong-Java</td>
<td>7.1</td>
<td>3.4</td>
</tr>
<tr>
<td>465</td>
<td>SE Pac. Paleoc.</td>
<td>7.2</td>
<td>5.3</td>
</tr>
</tbody>
</table>
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6. Definition of List to be Sent to OPCOM for Scheduling

Humphris then commented that SCICOM now should discuss where to draw the line between those proposals that will be sent forward to OPCOM for scheduling and those that will be returned to the SSEPS. The major difference is that those above the line will be sent to OPCOM and will not need to go through the SSEPS cycle again, but rather will be re-considered next year by SCICOM against the new proposals sent forward by the SSEPS. The proponents will be alerted to this, and will be able to send additional information if they wish prior to the August SCICOM meeting. Those below the line and not sent to OPCOM will go back to the SSEPS and the proponents with suggestions as to revisions, etc. that may be needed. Klein suggested as a straw man drawing the line between 431A - West Pacific Network: Japan Trench and 431B - W. Pacific Network: ION sites. McKenzie said that 431B does not have to be reworked, plus it is the most societally relevant proposal in the list, so the line should be below it. Humphris commented that, of the others, SCICOM had stated that more work needs to be done on the Peru Margin proposal, and it probably needs to go out for review again. The same is true of Tonga, where the emphasis on the different objectives needs to be changed. There were no clear suggestions as to how to change Shatsky, but it is a long way down the list so it should probably go back to the SSEPS. The Taiwan proposal needs some revision. Humphris asked whether there is agreement to draw the line below 431B - W. Pacific Seismic Network: ION sites, implying that all proposals above will not get sent out for external comment again. Natland commented that 486 needs to be revised to be a better proposal but, on questioning by Humphris, agreed that it did not need to go out for external comment again. However, the message should be sent that SCICOM needs to see some changes to the proposal. There not being any further objections, the line was drawn beneath 431B.

Miller was concerned about balance in that only one of the environmental legs being sent to OPCOM can be scheduled in FY'99. Humphris responded that this is bound to happen depending on the part of the ocean the ship is operating. There are two environment proposals that will be viable once the ship starts moving across the Pacific. The big problem with the Program in the past has been an effort to give every panel one or two legs in a given year. The Program has to get away from that mentality.
and deal with high priority science in the different geographic areas, whether or not it is environmental or interior-related.

**SCICOM Motion 97-2-5**

SCICOM approves the following ranking for programs to be considered for scheduling by OPCOM in FY'99 and beyond:

1) 484- E. Asia Monsoon
2) 426- Australia-Antarctic Discordance
3) 445- Nankai Trough
4) 472- Izu- Mariana Mass Balance
5) 455- Laurentide Ice Sheet Outlets
6) 490- Prydz Bay
7) 448- Ontong-Java
8) 465- SE Pac. Paleoceanography
9) 486- Paleogene Equatorial Pacific
10) 431A- West Pacific Seismic Network (Japan Trench)
11) 431B- West Pacific Seismic Network (ION sites)

Scheduling for FY '99 is to be in the general area of the Indian Ocean and Western Pacific. Some of these programs require modification before final approval of drilling plans by SCICOM. Proponents will be informed of the requested modifications by correspondence from the SCICOM Chair.

The following proposals, ranked below the above proposals, are returned to the ISSEP and ESSEP for revision, external review and/or comment, as detailed in correspondence to the proponents by the SCICOM Chair (and copied to the SSEPs Chairs).

12) 355- Peru Gas Hydrates
13) 451- Tonga Forearc
14) 463- Shatsky Rise
15) 450- Taiwan
16) 499- ION, Eq. Pacific

**Proposed: Natland, Seconded: Raymo**

12 in Favor, 3 Abstentions, 1 Absent

Proponents of proposals in the group sent to OPCOM will receive a letter from the SCICOM Chair stating what problems there are and in which direction revisions are encouraged. Proponents of those proposals ranked, but not sent to OPCOM, will get a letter with comments and will be asked to revise their proposals for consideration again at the SSEPs meetings. Hence, the SCICOM watchdogs need to write a draft paragraph about the SCICOM discussion of the proposal(s) for which they are responsible.

Larson asked whether OPCOM is going to be asked to schedule just through FY'99 -- if that is true, what happens to those not scheduled next year. Humphris reiterated the expected action to be taken regarding those proposals. McKenzie said that this time SCICOM has done in one meeting what used to be done in two. This time a prospectus was generated and ranked during the same meeting, and that now OPCOM will determine a final and absolute schedule from that list. Humphris responded that SCICOM is forwarding a ranked order of proposals, and OPCOM will be expected, as far as logistics and budget will allow, to take those proposals in the order in
which they are ranked. Humphris said that OPCOM will make a suggestion and it will be an interactive process with SCICOM, who has final approval the program.

There was then extensive discussion of the inclusion of the "and beyond" in terms of how far beyond it implies OPCOM can schedule. Humphris replied that it was supposed to provide OPCOM with some mechanism of forward planning in terms of dealing with weather windows, budget options, etc. Larson pointed out that half of OPCOM is on SCICOM, and that two of the other three members were involved in this discussion, so the message will get sent as to the sense of the motion. He suggested that in the future, OPCOM members are invited to attend SCICOM as observers so that they are up to speed with all the issues discussed.

7. Co-Chief Scientist Nominations

Humphris said that this issue is pertinent only for those proposals that can potentially be scheduled FY '99 due to their geographical location. Humphris suggested that this be done by e-mail after the schedule has been determined. Proponents, and those involved in site surveys, are clearly potential Co-Chiefs. Not only should SCICOM members be able to submit nominations, but also the ODP Member Committees.

**Action Item for the JOIDES Office:** Humphris will send out a request from nominations for the approved legs after OPCOM, and send them to ODP-TAMU by the end of October.

**E. Review of SSEP Recommendations on Other Externally Reviewed Proposals**

Humphris pointed out that SCICOM needs to send a response to the proponents of the other proposals that were externally reviewed but not in the highest groupings from the SSEPs, providing advice on what should happen next. She pointed out that specific individuals had been assigned to review the SSEPs and external comments and then, on the basis of these and the SSEP recommendations, suggest an appropriate response from SCICOM.

**The Three Antarctic Proposals (Wilkes Land, Ross Sea and Weddell Sea)** -- Ted Moore talked about the Environment SSEP's interest in the Antarctic proposals. Miller and Kudrass agreed that Wilkes Land and Ross Sea should be encouraged. However, the ESSEP felt that the strategy needs to be proven before the revisions are submitted. Although SCICOM recognizes the importance of the Weddell Sea for investigating ice history, further development of the objectives, including discussion of exactly how drilling will answer the questions posed, is required. SCICOM agreed with the ESSEP evaluation that the Cenozoic aspects are still poorly developed. This is also the case with the proposed Mesozoic drilling which is not well justified. SCICOM should also encourage the proponents to help in the search for an affordable ice support vessel. Fox reminded SCICOM that Sedco-Forex has to be satisfied with any choice of ice boat, so any efforts to find one should be done in close cooperation with ODP-TAMU.
442 - Mariana Trough -- Casey Moore described the proposal to drill the initiation of a back-arc basin in a volcanic-tectonic rift zone. The major problem pointed out by the SSEPs is that the sites are isolated phenomenon in which there will be petrological and sedimentological data but the site surveys are such that they cannot be tied into a stratigraphic framework that provides information on the timing of rifting, etc. Hence, this proposal really needs a good site survey.

Tarduno said that the proponents have to be more careful with the data they present, and provide more justification for the sites. Tamaki said that there is going to be some site survey work completed by a group of Japanese scientists. Any future proposal revision must justify its global significance in terms of rift processes and magma genesis. Specifically, SCICOM would like to see better development and discussion of how the proposed objectives can be tied to the planned drillholes. In addition, any subsequent proposal must show how more detailed geophysical surveys can link results from the drillholes to the larger volcanic and tectonic setting. For example, high quality seismic reflection surveys through the proposed sites would define basinal seismic stratigraphy, which would allow extension of the lithology and event timing of boreholes to basin margin faults or sediment sources. Finally, if the objectives are to include investigation of hydrothermal activity and mineralization, it is imperative that other work has already specifically located a potential site for drilling.

496 - VRMs and Oceanic Plateau -- Pearce described the proposal, and said that he agrees with the review of the Interior SSEP. He added that he thinks this is only a problem of regional interest (i.e. the formation of the continental margin of western Australia), and that SCICOM should not encourage a further submission. Humphris commented that she had the proposal explained by the main proponent, and it was not clear that there was global significance to the problem being addressed. It is not clear how determining whether the volcanic margin was supplied by deep or relatively shallow mantle can improve our understanding of geodynamic processes at volcanic rifted margins in general. As a more regional problem, it is unlikely that it will be a high priority for drilling.

511 - Canterbury Basin -- Hodell described the proposal and stated that the major concern is that the Canterbury Basin is in very close proximity to an active plate boundary. Hence, can the sea level hypothesis really be tested, and can the local tectonic changes be separated from the global eustatic changes? In their reply, the proponents seem to think that they can quantify the subsidence rates which is in disagreement with the SSEPs' comments. Hence, the proponents should be given an opportunity to state their case.

Natland asked if this was one of the areas identified by the Sea Level Working Group to attack the problem. Ted Moore responded that he thought the community view was that this particular sea level problem requires a very simple, and relatively slow and well-known rate of tectonic subsidence, rather than an area where there may be rapid and large variations. However, there are other aspects of the sea level problem that look at the impact of sea level on continental margins, and there, tectonics can play a major role. One Panel view was that one way to recast this would be to look at the interplay between tectonics, sea level change, and sediment supply, then it might be more appropriate. However, there was some disagreement between the two Panels on
whether the boundaries could be dated. Humphris commented that the key question is whether the Canterbury Basin is a critical area to address sea level questions as they stand in the LRP. SCICOM agreed that the proposal should not be encouraged as it stands now.

F. FY '99 ODP Budget

Humphris said that a lot of budgetary X-based items depend on what legs get scheduled and it is OPCOM concern to try to provide options for FY'99. OPCOM at this time needs advice on SCICOM priorities of non-leg related items so that this information can be used when they start to juggle putting leg expenses into this budget.

1. FY '99 ODP Program Budget (D. Falvey)

Before discussing the FY '99 budget, Falvey announced that he will be resigning as Program Director at end of year and will be taking up the position of Director of the British Geological Survey. He added that transition arrangements will be made in due course.

He started by presenting an overview diagram prepared for the JOI BoG, and should give SCICOM a sense of low end possibilities on the budget in the future, as it is the budget from 1986 in constant 1994 dollars. Through to 1994, it was moderately constant with waves that probably relate to cycles of non-US membership interest. Since then, ODP has lived with the decreasing budget (in real terms) and there is a viable FY '98 budget which was agreed with the Operators, and which will be going in the final form to NSF in the next 3 weeks.

Then he presented a budget for FY '98-FY '02, and said that, as part of the LRP exercise and the production of FY '98 through 2002 program plan for NSF, ODP was given indicative budgets for the out years, and they have settled down at, or just slightly below, the FY '98 level. However, TAMU is in the midst of discussions with ODL on the day rate and, because of commercial pressures on dynamically positioned drillships, there is going to be some increase in the day rate which seems commercially unavoidable. The outcome of that is not yet known. Overall, unless new members come into the Program, there is going to be an expanding problem.

Finally, he presented a budget for non leg-related X-based items for FY '98 and '99 (Appendix 11). He said these numbers have not been finalized because at the moment they are in the program plan associated with Lamont or TAMU. However, the whole concept of X-based budgeting is that it is not associated with a particular subcontractor, but rather is allocated first on a leg requirement, and then on a development requirement. The X-base moves between TAMU and Lamont, and in years where there is a lot of LWD, Lamont's X-base tends to be higher; in FY'98 there are a lot of leg-related expenses, such as the ice boat, and so the need for that kind of flexibility is built into the X-base concept.

In summary, Falvey said the specific numbers should not be seen as being fixed, but SCICOM should look at the total, which at least indicatively should be around $3.5-4 M in the out years. The summary of the non-leg related X-base proposals is around $2.6M. Some of the items are unavoidable, such as costs associated with the drydock or
the Performance Evaluation Committee, as they are part of the contractual requirements. At the end of this list are also the Microbiology facility (that is the cost of the container and a fit-out, not a special fitted lab on the ship), and the XRD which was in the SCIMP priority list. Falvey asked SCICOM, not for an absolute ranking, but a prioritization by groupings of items that can be sent to OPCOM.

Tauxe noted that the list did not include the Downhole Measurements Lab, and Falvey commented that it was not on the lists he was working from. It was added for consideration as a $400K item.

2. PCOM Discussion and Prioritization of Non Leg-Related Budget Items

Goldberg said that the LDEO proposed projects are all development projects, all to deal with software or data handling, and the funds are personnel funds. Only the CLIP-II project is on-going. Humphris asked if this means that if they do not go forward, people would get laid off for a month? Goldberg said that support during this time would have to be found elsewhere. He explained that the FMS Atlas is mainly an educational tool for user communities that are unfamiliar with borehole images, as sometimes scientists get their first exposure to borehole images when they are on the JOIDES Resolution. CORESEIS is a synthetic seismograph program targeted for the paleoceanographic community to determine synthetic seismograms in the shallowest section of the core data. It was very successful in Leg 168, not so much for paleoclimate but in analyzing a turbidite sequence. The Borehole Stability project is a modeling project using BHTV data and designed to distinguish between fracturing (drilling-induced or natural) and ultimately the drillability of a hole. It is a modeling program developed in industry and used quite a bit in horizontal drilling, and applies quite well to some of the boreholes ODP is expecting to do in future.

Baldauf commented that sampling parties are for two identified high recovery legs, and so is for post-cruise support. P-code receivers is to upgrade the GPS. Technical support is for high recovery legs where additional support is necessary. Hard rock coring and deep drilling is for technological development that include the next phase of the hammer drill system, and will be done in conjunction with TEDCOM. Data migration has already been discussed in terms of the FY98 budget and this would be the second phase of that effort. The cost for Publications within the X-base budget includes continuing development of the publication model for electronic publishing and maintenance of the web page.

Casey Moore asked where active heave compensation is, and Fox responded that it should be completed in FY98. McKenzie said that ESF has committed themselves to supply technicians on a call basis, which means supply them and pay their salary, and this could be a way where money could be saved from the X-base budget.

Humphris recommended that SCICOM look at the big ticket items and then provide some general low priority/high priority rating to the other items. She added that SCICOM is giving advice to OPCOM as to priorities of non-leg items, and OPCOM will have to juggle the budget and send it back to SCICOM for approval. Humphris asked about the status of JANUS. Fox responded that JANUS is done, but it is likely that there will be some follow-up that will be necessary, but exactly what is not yet understood.
Humphris recommended that items which are not negotiable should not
considered in any ranking or grouping. These include the dry-dock, Publications
(including WWW), and PEC-V. She recommended next concentrating on the big ticket
items. Casey Moore recommended a lower priority for data migration. Humphris said
that at the last SCICOM meeting, the commitment was made that science and
 technological innovation were the highest priorities for the Program. She asked Baldauf
what the $500K on the list represents. He replied that it is technological development,
and includes new casing strategies, new techniques to allow casing in difficult
environments, thereby making it easier to achieve deep drilling. Humphris said that
therefore that number represents the Program’s commitment to technological innovation
based on the priorities set at the SCICOM April meeting, and the $500K should be top
priority. Raymo commented that regarding the Microbiological System, SCICOM has
already decided to go the route of a container that could be leased/borrowed/brought on
board by a scientist, and that would be budgeted as a leg-related cost. Falvey also
pointed out the possibility of getting the microbiological facility as a third-party tool
development. Humphris suggested that the microbiology lab should be removed from
the list, as getting a van to the ship for a Leg is a Leg-related cost and, given the
budgetary constraints for FY99, and the path of development that SCICOM has
recommended at this meeting for microbiological studies, it should not be part of the X-
base for FY99. This does not mean that SCICOM is not fully in support of
microbiological studies. Falvey suggested lowering it down the list, rather than
eliminating it. Scott set up a strawman ranking for the high-priced items. Miller asked
whether the XRD should be ranked above the Downhole Measurements Lab. Fox said the
XRD can be replaced in any given year, but the lab could be expanded only during the
dry-dock. He added that if it is not be done now, it will not be done for the rest of the
program through 2003, which could seriously compromise some of ODP’s LRP
objectives. Hence, because of timing, the lab expansion should be placed as higher
priority.

Falvey commented that the XRD is like any other replacement item, and could be
bought when savings are available. However, the Data Migration project is about an on-
going contractual relationship, and it is also related to the whole concept of electronic
publication. They are not same kind of expenditures. Humphris said that, as far as she is
aware, there is no contract for Data Migration and if it is put off in FY98 the question for
FY99 would be do we want to start a contractual relationship for Data Migration.

By consensus, SCICOM agreed on the following prioritized list of high-
priced non-leg related items.

<table>
<thead>
<tr>
<th>Priority</th>
<th>Item</th>
<th>Estimated cost</th>
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<tbody>
<tr>
<td>1</td>
<td>Hard rock coring</td>
<td>400 K</td>
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<tr>
<td>1</td>
<td>Deep Drilling</td>
<td>100K</td>
</tr>
<tr>
<td>2</td>
<td>Downhole lab</td>
<td>400 K</td>
</tr>
<tr>
<td>3</td>
<td>XRD</td>
<td>150 K</td>
</tr>
<tr>
<td>4</td>
<td>Data Migration</td>
<td>335 K</td>
</tr>
<tr>
<td>5</td>
<td>Microbiological Facility</td>
<td>400 K*</td>
</tr>
</tbody>
</table>
(* - This item is last to indicate that it will be approached through a strategy other than building a permanent shipboard facility. It does not indicate the priority of the project as a whole.)

The other items are grouped as follows:

High Priority (in no particular order):
- CLIP-II
- CORESEIS
- Borehole Stability Project
- Sampling Parties

Medium-Low Priority:
- FMS Atlas

Low Priority (in no particular order):
- P-Code Receivers
- Technical Support (this is low due to the commitment by ESF to provide this support outside of the ODP budget).

This list will go to OPCOM, who will add the leg-related items. Once a more detailed budget is developed, it will be provided to SCICOM for their consideration.

Larson said that he wanted to bring up the bigger issue that the budget that Falvey had presented is a phase-down budget. We are looking at 2003-- and the end of ODP and scientific ocean drilling. OD-21 cannot be built out of the ashes of the Ocean Drilling Program; it can only be built on the shoulders of the Ocean Drilling Program. The US community is not prepared, in his opinion, to support a riser drilling program that does not operate in tandem with the JOIDES Resolution program. What the budget projections show is the near immediate demise of ODP. Imagine what this scenario will look like in 2003 with that budget projection. We are not going to be doing any high latitude science, not doing any technical innovation, nor using expensive tools. We will still be able to do good science, but it will be that involving drilling standard holes. This sounds very simply like a formula for closure.

In the face of this situation, the Program has written a LRP, reorganized TAMU and reduced costs, and reorganized the JOIDES Advisory Structure to be consistent with the LRP. The program has been reviewed nationally and internationally, and is probably the most reviewed program in Oceanography. We are planning further ahead now than ever before, and there is a publicity program reaching hundreds of thousands of people. Yet, we are still facing the demise of the Program. He asked what else can be done? The Program cannot go along this road much further. The risk is that we are planning for something that will not occur -- so, what else can we do to prevent this from happening?

Falvey said that he believes the one way to strengthen the Program is by embracing a wider community than we are doing now. He believes that the constituency of the Program over the last decade has probably shrunk. With DSDP, every oil company in the world was using DSDP information as part of their basic evaluation. This is not the
case anymore, and hardly anyone in the oil industry knows ODP exists. He said that this is in part because our publications are hidden at the moment; the Program is producing hard copies that are not getting to the community. Falvey also commented that getting new members is extremely difficult and requires a huge effort. In addition, the PR effort is a start, but the key is to get more scientists outside the periphery of the sea-going group involved in the Program.

Scott said the big problem is constant dollars. He thinks it is the responsibility of the Budget Committee to do what they can and rectify that, and point out to the money managers of different countries the need for more funds. Falvey stressed the point that it is necessary to go beyond shipboard representation. The cost per seagoing scientist is $300K, which is a lot of money for a small country with a limited science budget. Hence you have to embrace people beyond sea-going scientists. Humphris said that at the last ODP Council meeting, both herself and Detrick gave presentations focused on the limitations of what we are able to do in the Program with a decreasing financial budget. So, there is some effort being made to educate ODP Council about the severity of this situation. Falvey said that, in many cases their hands are tied, and that any argument for an increase in the Program has to be on the basis that you are embracing a broader community than just seagoing scientists. Francis said he thinks it would be beneficial to get involved with industry, and possibly make money on some industrial projects, where the ship can be rented for technological tests or other projects. Raymo asked whether that would not be the death of the Program by suggesting that we do not have enough exciting science so that we have to rent the boat to industry. Francis responded saying we have the science but may not have the money to do it. Natland said that much of the changes was in response to feedback from ODP Council; now that we have reorganized, perhaps it is time to go back to them and point out that we have done what they wanted. Malfait commented that in FY98 and FY99, there is an additional $3M that is going into ODP into the refit and, if you look at the high years, those were years where additional money was added into the Program for ice boats. He also expressed surprise at Larson's comment that a downtrend from 1986 in ODP is surprising because, if you look at any other program in US science, you would see that same down trend. That is what is happening to science. Larson replied that there is a threshold and below that, there is no Program. Scott questioned where the threshold is, as academia has been surviving more and more cuts each year. Hence, we have to come up with an argument that convinces everyone that we have reached a real threshold. Raymo commented that what we have to do is to actively work at getting different communities involved and behind the Program, and we need to consider this and help them get good proposals into the system.

Tamaki indicated that it is likely that submission of the proposal for the OD-21 vessel will be postponed, but that there will still be a request submitted for several million dollars over the next five years to be invested in technological development in preparation for OD-21. Hence, there may be some additional funds that will come in through collaboration on technological developments.

**SCICOM Motion 97-2-6**
SCICOM recognizes the importance of embracing a wider scientific constituency in all member countries. In future planning, SCICOM will make every effort to incorporate the interests of other scientific communities into ODP’s drilling plans.

Proposed: Humphris, Seconded: Larson

15 in Favor, 1 Absent

G. Leg Reports

Humphris mentioned that she had received a fax from Marie-Odile Beslier saying that she is ill, and will be unable to attend the meeting.

Leg 172 - L. Keigwin reviewed the scientific objectives of this Leg, and gave a general overview of the drilling operations and scientific results. He commented that all the scientific objectives were met. He was particularly excited about the detailed record of magnetic excursions that were recovered at several sites. With the high resolution isotope stratigraphy, they will be able to cross correlate the events.

Fox asked if there any insights were gained into the sediment waves. Keigwin replied that the wave migration can be seen, and that it is as slow as was found on Leg 94. He said that for an age-depth plot of the high deposition rate side of the mud wave, and the low deposition side of the mud wave, they cross over about 3 Ma. There are also small differences in physical properties between the two sides of the mud wave. Of particular interest was that the seismic record showed that the pattern of waves seems to break down about 300 mbsf; however, it appears that there may have been some general oceanographic circulation changes at that depth. Farrell asked Keigwin about gas hydrates in the Bermuda Rise sites. Keigwin replied that there were lower chlorinity values downhole at all sites that started where sulfate values went to zero. These are two indicators for the possibility of methanogenesis on the Bermuda Rise. Kudrass asked about the appropriateness of the new sampling policy, and Keigwin replied that the new flexibility is going to make a huge difference to high-resolution studies.

Leg 174B - K. Becker reviewed the scientific rationale for installing a CORK at Site 395A which is an important crustal reference hole drilled in the Atlantic in 1975. They succeeded in installing the CORK, but they are on the schedule to go back in February and recover some data using the French submersible Nautile. There are now 13 CORKs installed since 1991; four are involved in accretionary prism studies, five are in young, off-axis crust, two are on a sedimented ridge (these were installed twice). Eight are currently active, seven are brand new and there are no data retrieved from them yet. Becker also discussed the results of four logs run in the holes before they were CORKed. After the operations were complete, 24 hours became available and they moved 4 km to NW and drilled Site 1074 at the location of highest heat flow in a sediment pond. The goal was to use the pore fluid chemistry for signals of natural advection through the sediment to determine the cause of the high heat flow. They cored 63 m with the APC, composed of 61 m of nannofossil oozes and 2 m of red clay, then they XCB cored into the basalts. No signs of advection were detected, suggesting lateral flow of fluids in the basement for long distances keeps the sediment-basement contact nearly isothermal. They also completed some work to address the problem of the magnetization acquired.
during the APC coring process, which has been a major problem on some legs. It appears that the magnetization is being acquired when the shoe enters the sediments, and is not a problem with running the barrel up and down.

Klein asked if CORKs can help to assess fluid anisotropy around the hole. Becker replied that it cannot. Kudrass asked about the velocity of fluid circulation. Becker said the model results indicate a range of cm/year, but they have not been measured. Casey Moore asked if, where we cannot afford to install a CORK, would it be possible to install a simpler device to stop flow in and out. Becker replied that for downflow it would probably be possible to install a literal cork; for upflow, mechanical latches are needed. It would be possible with some modifications, but for re-entry without a drillship, a CORK outer body would be required, making it as expensive as the CORK outer body that is used now.

H. Science Planning - Status of PPGs

1. Long-Term Observatories - (K. Becker)

Becker reported on the first meeting of this PPG, which took place at MBARI, Monterey, July 8-9, 1997. One of the initial concerns was that the membership appeared a little imbalanced in favor of hydrogeologists. Hence, they invited Barbara Romanowicz as a guest representing ION. However, after discussion of the fact that ION has submitted proposals for all of their top priority sites, the representation on the PPG is probably sufficient at present. This first meeting was dedicated to understanding the mandate as envisioned by SCICOM, and what it meant in terms of liaisons to other initiatives. They also wondered whether they should have a liaison from the Environment SSEP as well as from the Interior SSEP, and what are the pathways for interaction with the JOIDES structure.

SCICOM has requested two reports from the PPG. They thought that an additional report is needed that should help proponents determine how they should go about writing and submitting proposals. Hence, they plan to produce a “Borehole Observatory Guide”, organized by generic observatories (CORK, ION, regional strain meter, and advanced active processes observatories) that would set out the technical requirements, extra expenses, available instrumentation, etc. The PPG sees this as a way to get strong proposal pressure for seafloor observatories as soon as possible. They plan to have a draft by the end of summer, and a finalized version by the next PPG meeting. This guide will then be made available on the web, probably through the JOIDES web page.

In addition, Becker commented on issues related to managing the observatories, which is complex and could involve a seafloor component sponsored by another geoscience initiative, and a borehole component. The PPG thinks that international managing, planning and funding mechanisms have to be established that go beyond JOIDES for this to succeed. In addition, JOIDES has to consider whether the community is willing to make the commitment to an expanded definition of the drilling program that identifies legacy holes. Becker asked SCICOM for advice on all these points.
Moore asked if there was an opportunity for incorporation of MBARI engineering into observatories. Becker says that there is interest, and they have a lot of resources. Humphris commented that was why Debra Stakes was placed on the PPG. Scott asked whether the make up of the PPG was adequate, given the wide range of tasks they have before them. Becker replied that most things are covered, but additional expertise for biosphere studies may be needed.

Humphris commented that this is a complicated PPG as it includes both scientific and technological aspects. She reviewed the membership of the PPG, and said she had contacted other international geoscience initiatives to ensure that there were nominations from them, so that the problem with liaisons to those initiatives would be dealt with through the membership of the PPG. Becker responded that it was not clear to anyone on the PPG that they were there to fill a role as a liaison.

On the issue of reporting relationships, Humphris said that perhaps SCICOM made a mistake in saying that the PPG should report to SCICOM, whereas the Advisory Structure shows them reporting to the SSEPs or to the relevant service panels. In addition, the direct reporting relationship to SCICOM might mislead the community into believing that proposals by PPGs might skip the SSEPs and go straight to SCICOM. Humphris said that the mandates of all the PPGs will be revised and the appropriate reporting relationships will be established. It would still be appropriate for SCICOM to send a liaison if they wish to, either for all meetings or for a specific meeting. In the case of the Observatory PPG, someone may have to report either to the SSEP or to SCIMP depending on the issue. Tarduno commented that the SSEPs have some specific questions that they need addressed now, and not through the proposed reports, so it is necessary for the SSEPs to have a more direct linkage to the PPGs. Humphris commented that, since ISSEP and ESSEP meet together, there is a need for only one person from the PPG to go and report. The PPG should also provide a liaison to SCIMP.

Regarding the management issues, Humphris said that her vision was that the PPG would provide some recommendations as to the kinds of issues that need to be considered when the decision is made to drill a hole that will become part of an observatory. The PPG is not being requested to write an entire implementation plan. SCICOM agreed they are on the right track with the guide/report.

Becker asked about the overlap with other PPGs, especially the Architecture of the Oceanic Lithosphere PPG. Humphris responded that she regarded their role as looking at the types of experiments needed to address specific crustal structure questions. Hence, there may be times when a member of the Observatory PPG should go to one of their meetings, but not as a continual liaising function to every meeting. McKenzie pointed out that the PPGs should be flexible, and that as new questions arise, the PPG may have to be refined, redirected, its membership changed, etc. Humphris pointed out that the PPGs will be re-evaluated each year, so some will exist perhaps for only one meeting while others (such as the Observatory PPG) will need more meetings to accomplish their mandate. McKenzie suggested that there will always be a need for a SCICOM liaison for PPGs, since it is SCICOM who is setting them up and should provide guidance on what they should be doing. Humphris responded that this is not a problem.

Goldberg mentioned the issue of operator liaison to PPGs. Humphris said this can be established as appropriate, and as requested by the PPG, but need not be a requirement at every meeting. Goldberg agreed, but said that ad-hoc liaising requires
some planning in advance. It would also be appropriate for TAMU or Lamont to request that they send a liaison to a specific meeting. Humphris said that she would ensure that

**Action item for the JOIDES Office:** Humphris will forward copies of requests for PPG meetings with the agendas to TAMU and Lamont (and SSP if appropriate).

2. **Subsurface Biosphere - (J. McKenzie)**

J. McKenzie reported on behalf of John Parkes about an EMaPS and MAST workshop that took place in Bristol (2-4 July 1997). She presented the highlights of what is already known about the deep biosphere, what research objectives were defined, the research strategy, and an action plan. These are summarized in the Draft Summary in Appendix 12. She stressed that one important objective is to assess the lower boundary of the biosphere. There were 12 research objectives that came out of the workshop that form the basis for ideas for designing research proposals that use drilling to investigate the deep biosphere.

Finally she commented on the recommendations required regarding the microbiological facilities. There were two concepts: one is that there is a need to begin doing routine microbiological sampling on all drillholes. Up to this point, it has been done very sporadically, but there is a need for routine work to begin to understand the extent and diversity of the community. This will require a microbiological facility on board the ship to do routine work on cores. This would be complemented by a portable facility that could be brought on board for specific microbiological legs or experiments. A list of equipment was developed, but it is important to note that it was felt that there had to be radioactive tracers brought on board the ship, which will require careful thought on how best to handle this.

Casey Moore asked whether contamination of ship with radioactive tracers is not a big problem. Humphris said there is a PCOM Motion in effect that says there will be no radioisotopes on board the drillship. That Motion was passed several years ago, so if this is going to be a requirement of microbiological work, there has to be a very serious effort to look into how radioisotopes are handled on research vessels everywhere to avoid any contamination problems. OPCOM would have to look very carefully into this whole issue as it could be a very serious problem for other work on sediment cores. McKenzie commented that it was visualized that there would be a self-contained lab where the tracer work would be done. SCIMP and the Biosphere PPG need to look into this.

Humphris asked for an estimate of the cost of the recommended items for a microbiological facility. McKenzie said it is roughly $500,000. Humphris asked if there was an estimate for a minimum facility. Pearce said he thought that the $500,000 was based on having everything needed to carry out routine sampling in a container that would serve as a clean lab. Casey Moore asked if the microbiological community is large enough to staff the legs for routine scientific work. McKenzie replied that it is likely to be a growing community, and that there are currently not a lot of geo-microbiologists. Scott asked if it would be more cost effective for ODP to start out by collaborating with oil companies in making such measurements, before making a major financial commitment to a facility on the drillship. Falvey commented that oil companies almost never core, and when they do, cores are extremely contaminated. Raymo suggested that, given the cost for this facility is similar to add-on costs for other legs (e.g. installing a
CORK), SCICOM could wait until a good proposal comes in and budget it as part of that Leg. Humphris said this is an option, but that another consideration is that the most convenient time to put a facility on the ship is during the dry-dock. Given the financial situation, this means deciding on a prioritization between a microbiology lab or a leg add-on cost or another big project. If it is going to be a container that is moved on and off the ship, then that makes the implementation timing much more flexible. Falvey commented that this could be a third-party facility that would not necessarily be funded solely by ODP. Humphris added that there are already microbiological vans or containers that are used routinely on research vessels that, except when in use, sit on a dock somewhere, and there may be a way that they could be leased/borrowed and moved on board the ship. Pearce commented that this also helps the radiotracer problem if it is in a container and not in a lab that is an integral part of the ship. Humphris also added that there is not a large enough community at the present time to staff every leg with a microbiologist.

3. Recommendations for Additional PPGs

Humphris reminded SCICOM that there are currently 6 PPGs set up, two of which are fully staffed, and four of which will be staffed at this meeting. She asked for other proposals for PPGs, and commented that SCICOM needs to be very careful not to create too many groups, not only because of the problem of too many committees in the structure, but also because of the financial burden on all the ODP-member countries. She then asked the two SSEP Chairs to present their recommendations.

Ted Moore reported that the ESSEP recommended the following two topics for PPGs:

- **Ultra-high resolution paleoclimate/paleoceanography** -- ESSEP felt that the single site add-ons, such as Saanich Inlet and the Santa Barbara Basin have provided some excellent high-resolution paleoclimatology records in some unique settings. This PPG would be to promote awareness of opportunities for special sites that would provide high-resolution paleoclimate records as the JOIDES Resolution moves around the ocean. This group would solicit and foster proposals from a new, non-drilling community to take advantage of such opportunities.

- **Hydrology of the ocean crust** -- This PPG would be more proactive in designing drilling programs aimed at investigating fluid flow in sediments and rocks. There are some commonalities in the modeling and the concepts/experiments that are devised to study fluid flow in a variety of environments. Hence, by bringing together different types of hydrologists, aquatic and sedimentary chemists, scientific drilling programs could be devised that would have a more coherent way of attacking problems aimed at a better understanding of fluid flow of various types.

Ted Moore then went on to talk about sea level, for which there are a number of proposals that seemed to address sea-level. However, when reviewing them, it became clear that there is no real consensus as to what constitutes a good sea level proposal. There are three major problems that sea level proposals should be attacking, and it is a very complicated issue to attack all three questions. At the moment, this is being done in a hit-or-miss fashion.
• **Sea Level** -- This PPG would provide a means to come to a community consensus on where and how to address the sea-level questions as outlined in the LRP. The recent criticism of sea-level proposals by the ISSEP has raised the need to provide additional advice on the drilling approach.

John Tarduno expressed concern about having too many PPGs. He hoped that SCICOM would consider disbanding PPGs once they have completed their reports and not have them all in operation for the full three years. He also expressed concern about the resources, and worries that we are getting close to having more people in the Structure than previously. He is not convinced that this is the best use of the resources, and that there may be better ways to address some of the issues through workshops, subcommittees of the SSEPs, etc.

He then reported that the ISSEP suggested the following topic for a PPG:

- **Conjugate rifted margins** -- In order to refine the critical questions related to conjugate rifted margins, it was necessary to have some previous drilling legs. There have now been some of these drilling legs, but there are no proposals at present that address the next level of questions, even though this is an important theme of the LRP. Hence ISSEP felt that now is the time to develop these proposals and take the next step in addressing conjugate rifted margins problems. There are some upcoming international meetings that would provide input to generate proposals.

Kensaku Tamaki said that SSP has recognized the need for a PPG on:

- **Gas Hydrates** -- This PPG would identify the outstanding scientific issues which have arisen from drilling into gas hydrates and design strategies for drilling them that will address the key questions brought up by Leg 164.

Humphris opened the discussion by suggesting that there are two issues that have to be considered. If the problem is just a lack of proposals for a topic that we know how to address, then an advertisement might suffice. If the problem is that there is a fundamental question as to how to approach the science that needs to be addressed in order to formulate proposals, then that seems to be the purpose of a PPG. If the issue is getting a community consensus, then that can be done with a Workshop.

**Ultra-high resolution paleoclimate/paleoceanography** -- Humphris commented that the problem here is not that the community doesn't know how to write a proposal, but rather that areas where high-resolution records could be obtained needed to be identified as the ship moves around the world. Ted Moore agreed. Humphris then suggested that this is an ESSEP function. By consensus, SCICOM agreed that this topic should be handled internally without a specific PPG, with liaisons to other groups like PEP, PAGES, etc.

**Hydrology of the ocean crust** -- Scott commented that there are proposals in the system. There also would seem to be some overlap with the mandate of the Seafloor Observatories PPG that already exists, so a better solution might be to add more hydrogeologists to that PPG. Casey Moore commented that, although they are already well represented, it might be appropriate to add someone who works in sedimentary
basins. Pearce commented that it might be a good time for a Workshop in that field bringing together people studying fluid flow in different environments. **By consensus, SCICOM decided not to appoint a separate PPG at this time.**

**Sea Level --** Miller presented the series of Workshops/Working Groups, etc. that have happened to promote sea level studies since COSOD II. Even after drilling New Jersey and the Bahamas, there is still a question as to what is a sea level proposal and what do we learn by all this drilling activity. A second issue is the technological issue of the problems of drilling in sediment on shallow continental margins. A third issue is a planning issue. Although there is proposal pressure, every one of those proposals has a problem in terms of how to address sea level. Ted Moore said there are proposals, but there is no consensus on what a good sea level proposal is. He said he thinks the tectonics/sea level issue needs to be readdressed. Humphris observed that now the two SSEPs are meeting together, the issue of how to separate out the tectonics and sea level signatures has become a big problem; hence, there does need to be some discussion as to how this can be handled. Humphris asked why this could not be resolved at a one-day workshop. Miller said that was done in 1989, and it was successful in coming to a consensus as to how to study sea level. Even after that workshop, there were still issues remaining. Natland commented that the real question is how do you get a proposals out of the community that will make it through the system; i.e. where is the best place, what is the best strategy, etc. He views this as a workshop function: a community consensus is needed to focus in on submitting one or two proposals that are really good. McKenzie recommended having an international conference to discuss the results from New Jersey and the Bahamas, and within that, have a day that becomes a workshop. Humphris said this is a larger community issue that requires an international workshop before it becomes an ODP issue. Miller expressed concern about the technological issues. Humphris agreed, and said that later it may be necessary for there to be a PPG to deal with the drilling strategy, but at present there is a fundamental scientific issue that needs to be dealt with by the community. **By consensus, SCICOM declined to form a PPG at present, but recommended a scientific workshop to define scientific strategies. Once this is accomplished, then ODP will reconsider the formation of a PPG.**

Humphris asked Kappel how ODP can foster such a workshop. She replied that a group has to write a proposal to NATO or to USSAC. Miller said he can send out a request to sea level groups and encourage them to write a proposal for such a meeting. Tarduno asked if it was better to wait for this workshop until after Leg 182. The consensus is that this is rather urgent and should not be postponed.

**Conjugate rifted margins --** Klein commented that she was on the NARM DPG and, although parts of the project have been done, more needs to be done to put the two sides of the Atlantic together. She feels that the scientific underpinnings exist, and it doesn't need another Group, but rather generation of more proposals, which could be done by getting the community excited again. Humphris commented that this will require more nurturing by the SSEPs as it is important to get more proposals in the system in the Atlantic if there is to be sufficient reason to drive the ship in that direction. Raymo said that MARGINS is already a very well organized group and it does not need a PPG.
Humphris commented that MARGINS is currently a US group, but it hopes to develop an international counterpart. By consensus, SCICOM decided that a PPG on conjugate rifted margins is not needed at the moment.

**Gas Hydrates** -- Klein said she thinks this is a great PPG topic -- it has scientific issues as well as technological issues. Tauxe asked if this could be incorporated within the deep-biosphere PPG. Humphris said that the gas hydrates issue is more geochemical, and this would dilute the effect of the biosphere group. Casey Moore said he sees a role for a PPG to develop a strategy as there are so many places that this could be studied. Tamaki said that Japan is very active in studying gas hydrates, especially for the resources implications. d'Ozouville said a workshop on this topic was organized last September by ESF, and this PPG would be most welcome.

### SCICOM Motion 97-2-7

The study of marine gas hydrates has been designated a high priority theme in the current ODP Long Range Plan. Based on the successful outcome and exciting results stemming from the gas hydrate drilling program during ODP Leg 164 on the Blake Ridge, as well as a number of other gas hydrate drilling achievements on other legs, SCICOM establishes a Gas Hydrates Program Planning Group in order to determine the future scientific goals and directions, and associated technological needs, for continued gas hydrate investigations.

#### Overall Goals

To develop a plan of drilling and sampling to:

- study the formation of natural gas hydrates in marine sediments
- determine the mechanism of development, nature, magnitude, and global distribution of gas hydrate reservoirs
- evaluate the source of the gas locked up in hydrates
- investigate the gas transport mechanism, and migration pathways through sedimentary structures, from site of origin to reservoir
- examine the effect of gas hydrates on the physical properties of the enclosing sediments, particularly as it relates to the potential relationship between gas hydrates and slope instability.

#### Mandate

To work with other appropriate international geoscience initiatives to:

1) develop the drilling strategy to complete the defined goals
2) identify geographic areas appropriate to meeting scientific objectives
3) advocate new and/or better technologies to achieve the objectives
4) organize and nurture the development of specific drilling proposals.

#### Timeline

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The PPG will exist for a maximum of three years, during which time it will report to the SSEPs on a regular basis. SCICOM will conduct an annual evaluation of the necessity for its continuation, with advice from the SSEPs.

The PPG will produce a final written report of the overall plan and its recommendations for implementation.

Proposed: McKenzie, Seconded: C. Moore
14 in Favor, 2 Absent

4. Nominations for Membership of PPGs

Humphris distributed sheets containing nominations from ODP-member committee and other global geoscience initiatives that she had received. She requested that SCICOM add names to the list. Later in the meeting, SCICOM divided up into areas of expertise, considered the lists of nominations, and produced recommendations for membership in a priority order. These were given the JOIDES Office for the development of PPGs.

5. Other Issues

Finally, SCICOM considered a request from ESSEP to strike the word “reef” from the Scientific Drilling of Shallow Water Reef Systems PPG and its mandate. Humphris pointed out that, when this PPG was discussed at the last SCICOM meeting, its mandate was very specifically aimed at very high resolution, recent studies that were of interest to such groups as PAGES and CLIVAR. If it is opened up to general sea-level issues, it will have too big a mandate. Ted Moore replied that restricting it to reefs is too narrow, and it is too narrow a charge that involves only a small group of people. Miller said that there are basically seven groups that are using alternate platforms to address sea level that we should try to bring into the ODP fold. He believes that was one of the main reasons that PPG was set up.

After lengthy deliberations, Miller and Ted Moore returned with a recommendation to take out the work “reef” and the word “low latitude” from the name and mandate of this PPG. Natland pointed out that the staffing of the group would have to be made according to the new changes. By consensus, SCICOM agreed to remove the words “reef” and “low latitude” from the name and mandates of the Scientific Drilling of Shallow Water Systems” PPG.

1. Dry-Dock Issues

Baldauf gave a short update on the status of identification of the needs related to dry-dock (Appendix 13). He started showing the estimated overall expenditure list, totaling to ~$7.3 M. The funds available are estimated to be $6 M (2M in FY '98 and 4 M in FY '99), so this raises the question as to whether there are funds available for a laboratory upgrade. He then reviewed the component of the dry-dock that is in the X-base funds in FY '98 and FY '99, which include travel, consulting, etc., and totals $733K over the two years. TAMU has identified several items that have to do with shipboard maintenance, totaling $ 238K. Due to financial limitations, very little maintenance has
been done in the past years. Finally he presented the time line that ends with the drydock starting in June-July 1999.

Falvey pointed out that the numbers presented on funding added up to $7.9M and not $7.3M. Larson asked about the reality of the NSF funding of $6M. Malfait replied that there is $1.5M in the FY'98 budget to Congress; exactly where the rest of it will come from is not determined. NSF's plan is to try to get $3M in FY'98 and $3M in FY'99. Larson asked what flexibility there is in the timing of the dry dock. Baldauf said there was more of a possibility of moving it more into the future than up sooner. One of the reasons it is in that window is because the SE Asian region is where Sedco Forex has experience with shipyards, and, because of weather, this is a good time to not be operating. Humphris suggested that OPCOM needs to consider this when they put the schedule together for that year.

Natland then presented the recommendations from SCIMP. The panel met in Halifax, visited the ship, and identified the items needed by priority (see Appendix 14).

Baldauf pointed out that the network upgrade is underway with FY'97 cost savings. The XRD replacement is currently included in the FY'99 X-based budget. Humphris noted that the items they recommend do not have to be necessarily done during the dry-dock, except those listed under Other Items. She expressed concern that SCIMP had not prioritized these, even though they were the two items they were specifically asked to look at. One model already discussed by SCICOM was the use of a van or container, rather than a built-in facility on the ship. The Downhole Measurements Lab has been talked about for a long time, there are already preliminary plans drawn up. At this stage there is no money available, but SCICOM needs to send a prioritization to TAMU in case funds become available -- they are roughly the same cost. Fox pointed out that, if there is going to be a shipboard microbiology lab for routine work every leg, it will require technicians, and hence provide another encumbrance on the program. Humphris pointed out that there are other issues associated with the microbiology lab in that there is still a large amount of development work to be done to demonstrate we can successfully do microbiology work on drill cores -- there are sampling and contamination issues. She pointed out that one of the comments from the Review Board was that ODP is jumping into the microbiology aspects too fast. Malfait said their concern was the plan to add a microbiological facility in the dry dock at great expense without having any of the background presented as to what the options might be. Francis pointed out that a container would need to be put where some of the downhole measurements tools are now stored, so an enlarged lab would be needed to house those tools. Raymo questioned the need to make budget decisions before a science program is in place and the community is ready to carry them out. McKenzie reminded SCICOM that microbiology was built into the LRP so that the program could phase in this aspect. Baldauf added that the Downhole Measurements Lab is clearly a dry-dock decision; if the microbiology facility is to be a van, it is not constrained by a drydock. Humphris pointed out that this program needs to be phased in, and as such, it may not be prudent to build a permanent facility on the ship initially. It should first be tried by using a van or container as a test and, if it turns out this is becomes a big part of the program, a permanent facility can be
added. The important point is to identify space on the ship for a container-type facility such as currently exist for work on UNOLS vessels.

SCICOM agreed to initially take the route of a containerized facility to be hired/leased ad hoc for specific leg, and use this as an experiment to decide which equipment is needed. In the meantime, SCICOM will recommend the identification of a space on board the vessel that will be earmarked for a container.

**Action Item for SCIMP:** SCICOM asks SCIMP (with input from the Biosphere PPG to look into (1) the existence, and availability of, containerized microbiological labs and the equipment/facilities contained therein; and (2) the methods by which work with radioisotopes is currently handled on other oceanographic research vessels. Natland will write a note to SCIMP to inform them of this decision.

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| SCICOM accepts the SCIMP prioritization of items for laboratory upgrades. It additionally places into the “High Priority” category:
1) the expansion of the Downhole Measurements Laboratory,
2) the definition, and preservation, of space for a containerized Microbiology laboratory. |

*Proposed: Pearce, Seconded: Casey Moore* 15 in Favor, 1 Absent

**J. On-going Implementation Projects**

1. **JANUS Update - (J. Farrell)**

   Farrell reviewed the scope of the project and the people participating in it. Then he outlined the project Phases I and II, and said that Phase I, which is designed to build the database structure, data acquisition systems, and reporting functions for all data that are currently captured during drilling legs, will be completed during FY 98. Phase II will include digital image capture for visual core description and the development of new systems for data not currently captured. He reviewed the status of items in Phase I that have been completed (operations, core/sample, depths, paleontology, MST, index properties, velocity, shear, XRD, XRF, IW, gas and carbonate) and items that have not yet been completed (VCD, paleomag, age model, color reflectance, thermal conductivity, Adara temperature).

   The JANUS Steering Committee (SC) went to sea during leg 174B, and reviewed all JANUS applications, lab interfaces, overall operations and maintenance. The SC made some specific recommendations (Appendix 15). In addition, they suggested continuation of barrel sheet production using AppleCORE in either paper or electronic CD-ROM form until an AppleCORE browser is developed that meets ODP's needs. The SC stressed that JANUS is now an integral part of the shipboard environment, and needs to be properly maintained. The SC recommended that: 1) additional technical support is needed (see specific recommendations in Appendix 15), 2) training for the scientific shipboard party is needed, 3) an additional data base person should be at portcalls for EOL/BOL, and 4) better shore testing of applications is required.

   Finally, Farrell said that regarding Phase II, the SC seeks a development plan from TAMU with a target leg for deployment. He added that they need to think about future additions post-cruise (e.g., $\delta^{18}$O) that need to be made relational to JANUS. He
concluded that the SC wants to see Phase I completed with the SC's Leg 174B recommendations, a TAMU plan and schedule for digital image/VCD deployment, a plan for maintaining JANUS, and a data migration plan. Farrell also commented that there needs to be more communication between the SC and SCIMP, and the link needs to be strengthened, especially as the SC will eventually be disbanded.

Humphris commented that the key issue is what is the relationship between a JOI Steering Committee and the Advisory Structure. This most likely lies at the SCIMP level and, at some point, oversight of JANUS has to revert to SCIMP. Humphris reminded SCICOM that the details of these recommendations are a SCIMP/OPCOM issue. Natland asked what is happening in terms of ensuring that data from legs occurring beyond Leg 171B are updated in the database as additional applications are included in JANUS. Farrell indicated that this is being done by TAMU as time and funds become available, and as it is prioritized. Natland felt that there should be a plan for this that is worked out for every leg, rather than completing it in a piecemeal fashion. Humphris commented that this is a SCIMP issue and should be delegated to them. Larson asked how the overall management of the project is proceeding. Falvey said that he felt that the past problems have been resolved. Humphris commented that it is very good to see JANUS actually becoming a reality and used on board the ship.

**Action Item for SCIMP:** SCICOM requests that SCIMP provide some recommendations regarding how data from Leg 171B on get transferred to, and updated in the JANUS data base.

2. **Publications**

Falvey gave a brief historical perspective and said that the original EXCOM strategy was to focus on (1) WWW publication of the Initial Reports and Scientific Results; (2) "hot links" to JANUS; and (3) CD-ROMs containing large data sets. The primary goals of this strategy were:

- to move ODP data and information more rapidly into a wider scientific community
- to increase the scientific constituency using ODP data
- to improve the scientific usability of all basic ODP data
- to contain the incipient blow-out in the cost of hard copy publications. It was not solely seen as a way to save money. Paper costs have risen 120%, and the sizes of the Volumes were increasing as well.

This necessarily entailed:

- developing a linked strategy involving JANUS and Publications
- capturing older data (migration)
- not moving ahead of the rest of the world
- ensuring that the MOU's were not violated.

At its last meeting, EXCOM reconfirmed this basic strategy and asked JOI to also explore the commercial option.

Humphris then reviewed the EXCOM Motion that upheld the original strategy that was passed in June after the JOI Steering Committee and SCICOM had expressed the desire to slow down the transition so as not to be ahead of the community in going electronic. EXCOM were sympathetic to this view, but because they felt that the Program
is heading towards some serious financial constraints, they passed their Motion and reconfirmed the schedule that was in their 1996 Motion for introducing electronic publications. In addition, they also said that the Volume Publications budget should be capped at the level indicated for the JOI model. In response to this, a letter went out to the community from a group of people on SCIMP, and the JOIDES Office received over 150 messages. Of those responses, 1/3 were from the US community, and 2/3 were from the non-US community, and there were only 6 that agreed with the EXCOM Motion. This outpouring of concern generated the letter from the Chair of EXCOM to the community explaining why this decision was made and suggesting that JOI would go ahead and look at options as to ways to make the transition a little easier.

Kappel said that one of the key parts of the EXCOM Motion was to maintain costs within those projected for the FY99 budget. One option would be to add an ~150-pg. companion book to the CD, that would be a soft cover report containing items like the Leg summary, location maps, significant highlights of the Leg and core photos. That would allow users to peruse the book, glean the basic information about the Leg, and then for details, use the CD or go to the WWW. Such a book for 6 legs would cost ~$50K/year. The Contractors like this option. The other option that TAMU has explored is the cost of printing the full IR contained in the CD at a local copying shop. It would be approximately $60-80.

In terms of the Publications Steering Committee, Kappel reported that was originally put together by JOI was not one meant to test software, but rather to look at the electronic publications situation, and make recommendations to the Program as to how to make the transition. What is needed now is user groups to test the software and ensure that the data are easily accessible and usable.

Humphris stated that SCICOM needs to provide some guidance to JOI regarding (1) what options are appropriate to address the needs of the community, (2) how best to help design and test an appropriate CD-ROM package which deals with the database issues. Larson asked whether the individuals on EXCOM who voted for this are aware of the community reaction. Falvey assured him that they are. Miller questioned whether the general path would be changed if there were more funds available. Humphris reminded him that PCOM has already stated that they are in support of this as the future direction of publications. Miller said that he is in agreement, but it is the timing of the elimination of the paper that is in question. Tauxe also commented that the contents are also a question, because what is currently being produced has none of the advantages of paper, and provides none of the potentially great advantages of electronic publications. Fox commented that the current CD-ROM is the product of the foresight of the Publications Department. They started experimenting with electronic publications several years ago, with advice from the IHP who said the electronic version should be a mirror image of the hard copy. This is just the first step on the evolutionary path and further development is planned as an X-based budget item in FY99. Humphris said that she wants this problem handled in a constructive way and that, although we cannot change the schedule, we can make the transition more palatable through the options present. Pearce suggested that the accompanying booklet seems to be an excellent compromise. Humphris endorsed this view, and said that the concept of sending out a CD-ROM in an
envelope with nothing accompanying it is not the way to go. Pearce said the volume should be something that can be used to select samples.

Larson asked about commercial options (e.g. Elsevier). Falvey commented that no further progress has been made, but there are legal implications of copyright issues that need to be resolved. Miller suggested that a paper version should be made available upon request and at additional cost, and rather than using local copy stores, have TAMU print the paper copies and turn it into a money-making proposition. Falvey and Miller agreed that it would be easier on the system contracting the job outside, rather than having TAMU trying to do it themselves. TAMU would hold the scientific copyright, but subcontract the job. McKenzie said that among the ESF community, the most concerned are the micropaleontologists, and there must be a reason why they want paper copies. Humphris pointed out that there is already a paleontological journal that is totally electronic, in which paleontologists are publishing. SCICOM agreed that the best way to go is to have a companion volume with the CD, plus the option of having the full IR in paper available at a cost to the user. McKenzie and Klein supported this in saying that this would help the transition period for those user groups which are not ready yet for the transition. Kudrass commented that these options would present a good compromise for the German ODP community. The length of the transition period will be discussed at later meetings.

Two other issues were discussed: first, who will be responsible for determining the contents of the booklet; and second, who will identify and oversee the testing user groups. Raymo suggested giving a week or two of additional salary to co-chiefs should be involved in defining the user groups. SCIMP should also be involved as it will eventually have to take on the responsibility of oversight of Publications. Kappel suggested that the JOI Publication Steering Committee be asked to determine the volume content and help JOI define user groups as its last task. By consensus, SCICOM recommends that the JOI Publications Steering Committee be asked to define the contents of the CD-ROM companion volume, and assist JOI in identifying appropriate test user groups during the further development of the electronic publications products.

SCICOM Motion 97-2-9
SCICOM applauds efforts to provide cutting-edge technology in data access and electronic publication that will result in greater access of ODP data and scientific interpretations to the global scientific community. However, SCICOM is aware of the concerns of some of the ODP community in not producing a paper version of the Initial Reports volumes during a transition period. Therefore, SCICOM support the production of an abridged companion paper version to accompany the CD, and suggests that JOI investigate subcontracting publication of a paper copy on user-demand and at cost to the user for a transition period.

Proposed: Miller, Seconded: McKenzie
14 in Favor, 1 Abstain, 1 Absent

K. EMaPS - (L. d'Ozouville)
L. d'Ozouville gave a presentation about the structure of funding of marine science in Europe, EMaPS (European Marine and Polar Science), and the planning for the future of European efforts in drilling. EMaPs, which was the result of joint action by the EC MAST program and the European Science Foundation (ESF) was created in October 1995, in order to strengthen the position of marine science in Europe, and to improve the coordination between the research organizations involving marine and polar activities. EMaPs is organized with two Boards: one for Marine Science, and the other for Polar Science. The main objectives of the EMaPS Marine Board are to facilitate the implementation of European and international networks and projects, to define a scientific strategy for Europe, to facilitate the shared use of research facilities, and to promote new technology. Currently, there are four main marine scientific challenges tackled by the Marine Board: coastal management research, ocean modeling, marine biodiversity, and deep-sea drilling.

The goals for EMaPS related to deep-sea drilling are to identify the European capabilities for deep sea drilling and coring, to define a long-term pan-European strategy, and to promote European initiatives for the development of new technology. In addressing these issues, it was recognized that input was needed from both the scientific drilling community and also the private sector, in particular, the oil companies.

Two meetings have been held so far. A first meeting of EMaPS related to deep-sea drilling technologies was held in Strasbourg, October 14-15 1996 and called "European Initiatives for New Deep Sea Drilling Technologies". It was attended by 26 participants, 14 of whom were from oil and contracting companies. The second Workshop was held in Southampton, 7-8 November, 1996, on the topic of European Scientific Strategies for Ocean Drilling. At this meeting, 30 participants discussed European strategies for ocean coring and drilling, addressing major scientific themes such as the oceanic lithosphere, active margins, paleoclimatology, the high-latitude seas, the deep biosphere and the management of continental margins (slope stability, gas hydrates and economic development). The outcome of these Workshops -- a Position Paper called "European Initiatives in Science and Technology for Deep-Sea Coring and Drilling" -- was published in July 1997 (this document was handed out at the meeting). It was recognized that the scientific and oil industry communities have several interests in common with regard to drilling objectives and new drilling technologies.

The three main scientific interests defined for Europe were: resource exploitation (living and mineral); continental margins, slope stability, possible areas of gas, and earthquakes; high-resolution paleoclimate. There was also acknowledgment that there are a lot of objectives that cannot be fulfilled by the JOIDES Resolution, and therefore access to other platforms is needed. In terms of technology, the oil companies reported that the present riser technologies are close to reaching their depth limits, and could not be extended without difficulties. The future probably lies in a slim-line riser or riserless system. It was also recognized that in Europe there is a need for a more concerted approach of all the European partners, with collaboration of both the scientific community and the oil companies.

Fox asked whether the definition of the marine biodiversity scientific challenge was focused on the water column or whether it included the subsurface biosphere. d'Ozouville responded that it was focused on the water column and the seafloor.
Humphris thanked d'Ozouville for his presentation, and said that updates were important for SCICOM, and it was clear that there are many ways in which the European community can contribute both science and technology to ODP.

L. Planning for IODP

1. CONCORD Report- (K. Tamaki)

Tamaki reported on the very successful CONCORD meeting in July, and about 150 participants from 17 countries participated. He commented that JAMSTEC were very pleased with the outcome of the meeting. There were six Working Groups, who defined objectives of riser drilling for different scientific themes. The overall recommendations were discussed and approved by the entire group of participants. He reviewed the recommendations that emerged from the meeting (Appendix 16), and noted that the first experiment will be related to a seismogenic zone. Planning for this needs to start immediately.

Tamaki commented that the proposal for OD-21 will not be submitted in FY'98 because the Japanese government will not accept any new, large proposals for that year. JAMSTEC and STA received about $2M this year for preparation for riser drilling, so they will request an increase in this budget for FY98. In addition, they are requesting a technology budget to begin development of coring systems and borehole measurement capabilities. Hence, even though the proposal submission was postponed by one year, they do not believe the timing of the overall project will be changed.

Larson asked if the plan is to submit the OD-21 vessel construction proposal for FY99. Tamaki replied that is the plan, but it depends on the administration. He added that the entire Ministry is being reorganized, and MONBUSHO and STA may be merged into one.

2. Structure and Management of IODP - (B. Malfait)

Malfait gave an update on Structure and Management of IODP (see Appendix 17). A meeting in Leiden on April 29, 1997, provided some recommendations regarding the nature of IODP, the need for multiple platforms, and the creation of an International Working Group for IODP, chaired by M. Purdy (NSF) and T. Maruyama (STA). Three phases of participation are envisaged:

- a letter of interest phase - indicating participation in planning
- a letter of intent phase - with a commitment to seek funding
- Memorandum of Understanding Phase - involving a commitment to become a full member.

A second meeting in Brest, on June 12, established a framework for IODP, and discussed interactions with the science and technology planning structures. A third meeting is planned for Sept. 22 to finalize the Terms of Reference and membership of the IWG, and to discuss OD-21 developments and future science and technology planning requirements. In the meantime, TEDCOM has been tasked with examining OD-21 cost estimates for global drilling, and SCICOM and SCIMP will be asked to examine details of the conduct of science on a riser vessel.
Humphris stated that one of the items for discussion at the next SCICOM meeting will be the role it needs to play in planning how science should be conducted in a multiple platform program, as well as in planning the first science expected to be conducted from the riser vessel. Input as to how the IWG sees the current structure participating in this planning effort will come from the September meeting.

M. Liaisons to Other International Programs

EXCOM tasked SCICOM with defining an appropriate formal liaison with the Nansen Arctic Drilling program because they are very interested in having some sort of cooperative arrangement with ODP, and possibly using ODP’s core facilities and description techniques. In general, for global geoscience initiatives, Humphris commented that the liaison function should be either at the SSEP or PPG level, where the scientific interaction and integration of objectives can take place. However, with NAD, a different liaison strategy may be necessary as there is already a closer tie with ODP that will entail cooperative arrangements with ODP. They will be drilling their own sites with other platforms, but it makes sense to avoid duplication in sampling and archiving procedures, etc. Falvey added that NAD includes a number of national initiatives and has an international signature. Each country is now trying to get funds to start a drilling program, so first they need to become an international initiative, and then they need to come to ODP with a proposal or strategy. The JOIDES Resolution probably is not appropriate for the Arctic, but this link could be helpful for both programs as ODP has stated it wants to use additional platforms. Natland suggested that SCICOM is the appropriate level of liaison until such time as there is a proposal submitted, when an assessment could be made as to what is needed (possibly a PPG). Humphris agreed this is appropriate until this can be moved to the ESSEP once there is something concrete to work with. By consensus, SCICOM agreed to establish a liaison to NAD. Gerard Bond was suggested as SCICOM liaison to NAD, and Humphris agreed to contact him. In terms of a liaison from NAD to SCICOM, Thiede has agreed to designate someone. Action item for the JOIDES Office: SCICOM requests that the JOIDES Office invite someone from NAD to the next meeting to provide a status report on planning to SCICOM.

N. New Business

1) Add-On Experiment for Leg 179 -- Kudrass presented an ancillary proposal to conduct a small oblique seismic experiment during Leg 179 to study seismic stratigraphy around the NERO site using the R/V SONNE in combination with the JOIDES Resolution. The JOIDES Resolution would place a 3D seismometer in the hole, while the SONNE steams around the hole. Two extra days are needed for this work which will shed light on the lateral heterogeneity of the crust around the hole.

Natland commented that the timing is critical in this kind of experiments, and their organization complicated because of the need for a rendezvous of two ships. Humphris commented that the logistics is an OPCOM issue; the question is whether the
science is of sufficient importance that it would be accommodated if possible. Humphris added that this is an example of an experiment that takes a limited amount of time, requires two ships that are available, and is an experiment-of-opportunity that could provide some interesting results on lateral heterogeneity and isotropy. Goldberg said that there is an auxiliary project, already funded for Leg 179, to do the inverse of that experiment; i.e. using OBSs as recording instruments and the drillbit as the sound source. The two together would make a nice scientific calibration. Tarduno, who had been sent the proposal to review, commented that some of the issues this addresses are important to ISSEP. Klein commented that this should not be presented to SCICOM in this way, and that it should go through the review system that we have. Humphris agreed that there is a system set up for this, and should not happen. The ISSEP will be asked to provide a formal review of this ancillary project at their next meeting.

**Action item for OPCOM:** SCICOM requests that OPCOM look at whetherlogistically it is possible to incorporate an oblique VSP experiment into Leg 179.

2) **Proposal Review Procedures** -- Tarduno said that the external evaluation comments received from the first external review process were of highly variable quality. The ISSEP felt that the questions that are being asked of the external evaluators should be revisited and rephrased to make the comments more useful to the Panel. The questions are too general, hence generating general responses. Perhaps the external evaluators should be asked to review the testable hypothesis presented in the proposal. Ted Moore commented that his Panel found having external comments very helpful, but they were often very general in nature. Raymo suggested that the changes in the wording should be linked to the original guidelines for proposal submission so there is consistency throughout the process. Pearce brought up the experience of the Tonga proposal in which the proponents dealt with the comments of the external reviewers, and then the SSEPs brought up another set of criticisms that the proponents never got to respond to before the SSEPs grouped the proposals. Humphris said that this should not happen again. The reason that it had the opportunity to happen this time was that there was a brand new Panel with different ideas reviewing the proposal. From now on, the proposals will be reviewed by the same Panel that sent them out for review so they should have already brought up any criticisms. Lagabrielle said there should be a maximum space for comments, as he found some of the comments too long. Miller also commented that the questions and requirements of the reviewer should be kept simple. Kappel made a plea for complete contact information for anyone suggested as a potential evaluator. She also commented that JOI got a tremendously positive response from the individuals asked to review proposals.

**Action Item for the SSEP Chairs, JOI, and the JOIDES Office:** this group should review the external comment criteria, and revise them as necessary for the next external comment process.

O. **Future Meetings**

The next SCICOM meeting will be held in Boulder, Colorado, on March 18-20, 1988, and hosted by Jonathan Overpeck. OPCOM will take place in Boulder immediately before them on March 16-17, 1998.
(Note: At the OPCOM meeting, it was decided that OPCOM would meet on the 17th and then in Joint Session with SCICOM on 18th March).

The dates for the summer meeting of SCICOM in Durham, U.K., hosted by Julian Pearce have been changed. The originally proposed dates overlap with the International Paleoceanography Conference in Lisbon. SCICOM will take place on August 17-19, 1988, followed by PANCH on August 20, 1988, and by OPCOM on August 21-22, 1988.

P. Other Motions

**SCICOM Motion 97-2-10**
SCICOM would like to thank Dr. Tim Francis for his service as Deputy Director of the Ocean Drilling Program, and wishes him well in his new endeavors. Tim has skillfully helped us to chart the track of the JOIDES Resolution and has never failed to clear its path, and oft-time ours, over many years. He has ably represented the interests of ODP, and of scientific ocean drilling, to the JOIDES planning structure, and to the scientific community at large. We shall miss his unfailing good humor and cheerful optimism. As he leaves, we wish him to know that he has many good friends among us, and always will.

**SCICOM Motion 97-2-11**
SCICOM thanks Dave Falvey for his service as Director of JOI. Dave has worked with his many talents on our behalf at jobs ranging from introducing ODP to financial realities through A-based and X-based budgeting, to seeking out new ODP members in the economically emergent countries of the world. By accepting the Directorship of the British Geological Survey he will be taking on some of these same challenges clothed in different forms, and incidentally, will be helping to reverse the fast tide of Irish “immigration” from the British Isles. We wish him well.

**SCICOM Motion 97-2-12**
SCICOM thanks Judy McKenzie for hosting the meeting with her ideal combination of Swiss efficiency and American enthusiasm. By bringing us to the Jeweled Kingdom she has given us opportunities to walk across continent-ocean boundaries now 1000’s of meters above sea level, eat and work in a hotel used by the economic leaders of the world, and stand on streets that conceal enormous fortunes in international bank accounts. We greatly appreciate our visit to Switzerland: a crossroads of multilingual cultures and high-level expertise, because it is a country that exemplifies as no other the same mixture of international talent and cooperation that exists onboard the JOIDES Resolution.

ADJOURN
NOTE: OPCOM during its meeting in Davos, August 22-23rd, 1997, generated a possible drilling schedule, which was approved by SCICOM as follows:

<table>
<thead>
<tr>
<th>SCICOM Approval 97-2-13</th>
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<tr>
<td>SCICOM approves by e-mail the schedule for FY'99 (and beyond) as follows:</td>
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<table>
<thead>
<tr>
<th>Leg</th>
<th>Start/End</th>
<th>Area/Campaign</th>
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<tbody>
<tr>
<td>184</td>
<td>Feb - April</td>
<td>East Asia Monsoon</td>
</tr>
<tr>
<td>185</td>
<td>April - June</td>
<td>Izu-Mariana Mass Flux</td>
</tr>
<tr>
<td>186</td>
<td>June - August</td>
<td>W. Pacific Seismic Network - Japan Trench</td>
</tr>
<tr>
<td></td>
<td>August - October</td>
<td>DRYDOCK</td>
</tr>
<tr>
<td>(188)</td>
<td>Dec '99 - Feb '00</td>
<td>Prydz Bay</td>
</tr>
</tbody>
</table>

The following constraints and limitations were noted for certain of these legs:

E. Asia Monsoon: contingent on satisfactory site survey data. There is also an issue of research clearance for the two southern sites. TAMU will begin trying to obtain approval immediately, but the possibility exists that the leg may have to proceed without those two sites. This was felt to not seriously impact achievement of the scientific goals.

Prydz Bay: this is PENCILLED IN ONLY, and will be contingent on two factors. First, that the W. Antarctic Peninsula leg demonstrates that the scientific objectives can be achieved with the proposed drilling strategy. Second, that the proponents can find a way to make a substantial contribution to the cost of an ice support vessel. It is very unlikely that ODP will be able to cover the full cost of ice support vessels under the current budgetary predictions.

The vote was as follows: For: 13, Abstentions: 2 (both conflict of interest), Absent: 1
### APPENDICES

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<th>Description</th>
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<td>TAMU Budget and Timeline Options for Data Migration Project</td>
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<td>Appendix 7</td>
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<td>Appendix 8</td>
<td>Summary of FY'98 Logging Tool Deployments</td>
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<td>Appendix 9</td>
<td>FY'99 Proposed Logging Programs</td>
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<td>Draft Summary of EMaPS and MAST Biosphere Workshop</td>
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<td>Appendix 15</td>
<td>JANUS Steering Committee Recommendations</td>
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<td>Appendix 16</td>
<td>Recommendations from CONCORD</td>
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<tr>
<td>Appendix 17</td>
<td>IODP International Working Group</td>
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</table>
7.1 IMPLEMENTATION OF THE NEW STRUCTURE - UPDATE ON PPGS

ODP PROGRAM PLANNING GROUPS (PPGS)

SCIENCE STEERING AND EVALUATION PANEL
- ENVIRONMENT
  - Deep Biosphere PPG
  - Scientific Drilling of Shallow Water Systems PPG
- ODP Program Planning Groups

SCIENCE STEERING AND EVALUATION PANEL
- INTERIOR
  - Architecture of Oceanic Lithosphere PPG
  - Climate and Tectonics PPG
  - Gas Hydrates PPG
  - Extreme Climates & Environments PPG
  - Long-Term Observatories PPG

Diagram showing the relationships between different groups.
### 7.2 SCICOM VOTING PROCEDURES

**Action Sought:**
EXCOM is asked to approve SCICOM voting procedures (Motion 97-2-4).

**Background:**

In order to develop voting procedures leading to the determination of a drilling schedule that are in line with the new Science Advisory Structure, SCICOM has revised PCOM Motion 96-1-5 and adopted a three-step voting procedure.

<table>
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<tr>
<th>SCICOM Motion 97-2-4</th>
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<tbody>
<tr>
<td>In order to align the voting procedures with the new Science Advisory Structure, SCICOM revises PCOM Motion 96-1-5 and adopts the following three-step voting procedure for purposes of determining a drilling schedule. <strong>Conflicted SCICOM members will be excluded from this entire process.</strong></td>
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<tr>
<td><strong>Step 1:</strong> Choose programs to retain for purposes of an integrated global scientific ranking, based on advice from the SSEPS as to their priority and relevance to the ODP Long Range Plan:</td>
</tr>
<tr>
<td><strong>Option 1:</strong> Panel consensus on recommendation of Chair;</td>
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<tr>
<td><strong>Option 2:</strong> Show-of-hands vote on each drilling proposal, with retention of a proposal for ranking based on 50% or more of votes in favor.</td>
</tr>
<tr>
<td><strong>Step 2:</strong> Rank proposals based on scientific quality and priority. Given X programs retained from the previous step, un-conflicted SCICOM members will rank programs from 1 to X, on a signed paper ballot. After voting, written ranks of each program by each voter will be tabulated and the mean ranking and standard deviation of each program will be calculated. Paper ballots will be retained in the records of the meeting. A list of proposals that SCICOM wishes to be scheduled will then be determined from the ranked list, and will be forwarded to OPCOM.</td>
</tr>
<tr>
<td><strong>Step 3:</strong> OPCOM will then prepare a draft schedule which will be sent to SCICOM for consideration of quality of the proposed schedule as a whole and the budgetary implications. SCICOM will vote by e-mail to accept or reject the schedule proposed by OPCOM, based on a simple majority of votes cast. Rejection of the schedule at this stage dictates the preparation of a new schedule by OPCOM.</td>
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</table>

Proposed: Natland, Seconded: Moore

15 in Favor, 1 Absent
7.3 DRY-DOCK RECOMMENDATIONS

Action Sought

EXCOM is asked to accept SCICOM’s recommendations that

- the expansion of the Downhole Measurements Lab be carried out during the FY 99 mid-life refit of the JOIDES Resolution, if sufficient funds are available; and
- the definition, and preservation, of space for a containerized Microbiology laboratory on board the JOIDES Resolution be carried out during the dry-dock (SCICOM Motion 97-2-8).

Background

There is a scheduled dry-dock for the mid-life refit of the JOIDES Resolution in FY99. After renovations, the ship could be operational for another 15-20 years. This is likely to be carried out in Singapore following Leg 186 and will take up to two months, roughly equivalent to one drilling Leg. On October 1, NSF approved the FY 1998 ODP Program Plan. The budget included $3.0 million of the total $6M required for the mid-life refit. The costs related to the dry-dock fall into three areas: ship modifications (drilling services), science modifications (science services), and ship operations (Administrative Services).

At the April SCICOM Meeting, the Committee requested that the new SCIMP develop a list of improvements for the science facilities onboard the JR which could be done during the scheduled dry-dock. SCICOM requested this list in time for evaluation by SCICOM at their August Meeting (SCICOM Motion 97-1-13). In August, SCICOM accepted the SCIMP report and listed the expansion of the Downhole Measurements Lab and the Microbiological Facility among the top priority non-leg related items in their prioritized list of high-priced, non-leg related items to be potentially included in the FY '99 ODP Budget. The scheduled dry-dock for the mid-life refit of the JOIDES Resolution in FY99 provides an opportunity for the expansion of the Downhole Measurements Lab, if there are funds available.

SCICOM Motion 97-2-8
SCICOM accepts the SCIMP prioritization of items for laboratory upgrades. It additionally places into the “High Priority” category:
1) the expansion of the Downhole Measurements Laboratory,
2) the definition, and preservation, of space for a containerized Microbiology laboratory.
7.3 DRY-DOCK RECOMMENDATIONS

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<thead>
<tr>
<th>Priority</th>
<th>Item</th>
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<tbody>
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<td>1</td>
<td>Hard rock coring</td>
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<tr>
<td>1</td>
<td>Deep Drilling</td>
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<tr>
<td>2</td>
<td>Downhole lab</td>
</tr>
<tr>
<td>3</td>
<td>XRD</td>
</tr>
<tr>
<td>4</td>
<td>Data Migration</td>
</tr>
<tr>
<td>5</td>
<td>Microbiological Facility</td>
</tr>
</tbody>
</table>

SCIMP considered the microbiological facility a third party tool, and suggested that the $400K price tag represented the Cadillac version. On the basis of discussions following the SCIMP report, and a presentation about a recently EMaPS and MAST-sponsored workshop on the deep biosphere, SCICOM expressed the opinion that the need for the microbiology lab must be demonstrated before ODP pays for a permanent facility and recommended to JOI that a permanent microbiology laboratory facility not be installed on the JOIDES Resolution during the dry-dock. Instead, the committee recommended a path of development for microbiological studies that would more appropriately utilize a portable facility (container van) that could be leased/borrowed/brought on board the JOIDES Resolution as leg science dictated, and budgeted for as a leg-related cost item. To this end, SCICOM has requested that "the definition, and preservation, of space for a containerized Microbiology laboratory" be pursued. SCICOM reaffirmed their support for studies of the deep biosphere and noted that the apparent downgrading of the microbiology lab on the list is not a reflection of its priority, but rather indicative of a different strategic approach to obtaining such a facility.

A list of equipment need for a microbiological facility was developed by participants at the EMaPS and MAST workshop. SCICOM noted that this included radioactive tracers, which raised concerns regarding potential contamination on board the ship. There is a PCOM Motion, which was passed several years ago, stating that there will be no radioisotopes on board the drillship. SCICOM determined that if, a very serious effort must be made to look into how radioisotopes are handled on research vessels everywhere. As a consequence of the discussions on the type of microbiology facility best suited to pursue ODP's special project on the deep biosphere, and the understanding that the use of radioisotopes is a requirement for microbiological work, SCICOM has asked SCIMP (with input from the Biosphere PPG) to look into (1) the existence, and availability of, containerized microbiological labs and the equipment/facilities contained therein; and (2) the methods by which work with radioisotopes is currently handled on other oceanographic research vessels.

After the leg-related costs associated with the legs scheduled by OPCOM were assessed, OPCOM conducted a Review of SCICOM Prioritization of non-leg-related Items. The microbiology facility was removed from the original list of X-Base items and included in a separate category.
8.1.1 FINAL SELECTION FOR THE 1999-2000 NON-US JOIDES OFFICE

Background:

The solicitation for Support for Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES) Advisory Activities of the Ocean Drilling Program, or JOIDES Office RFP, was issued on 8 May, 1997. After a requested extension, the RFP closed 8 September, 1997. JOI has evaluated proposals received using formal source selection procedures. The Director, ODP, is the Source Selection Authority (SSA). After a careful technical evaluation of the bids to host the next non-US JOIDES Office, it was decided to recommend award to Geomar, Germany.

Of the two bids received, the Technical Evaluation Panel ranked Geomar's marginally higher than that from the Geological Survey of Canada. The Source Selection Authority concurred with that recommendation. EXCOM was advised in late November, by email, of the outcome of the review and selection process. Fourteen EXCOM members endorsed the recommendation by email; Australia/Canada/Chinese Taipei/Korea Consortium and Germany abstained. JOI forwarded the subcontract to NSF for review on 5 December, and expects to make an award on or about 1 January, 1998.

JOI will report to EXCOM on the search for individuals for these two positions.

ADVERTISEMENTS

Director, Ocean Drilling Program
Joint Oceanographic Institutions (JOI)

Joint Oceanographic Institutions (JOI) is seeking a highly qualified scientist, with established scientific leadership and management skills, to fill the vacancy of Director, Ocean Drilling Program. By agreement with the US National Science Foundation (NSF), the Director is responsible for leading and administering the Ocean Drilling Program on behalf of its 21 international partners. The Director is also responsible for the management of US science programs affiliated with ODP.

Candidates should note that the current phase of ODP is in the process of being renewed and will now run to 2003. Necessary minimum qualifications for the position include a Ph.D. in oceanography or geoscience; 15 years experience in research, with extensive project and/or program management experience; and a willingness to relocate to Washington, DC. Desirable additional qualifications include familiarity with the ODP and NSF program planning procedures; a desire to enhance cooperation between ODP and other international scientific initiatives; and a vision of how to involve a wider, international scientific community in the Program, both through the development of new partners and the integration of new scientific disciplines.

The position is open to citizens of any ODP member country; it requires extensive domestic and international travel; and is available from 5 January, 1998. An application letter, including a complete CV and names of 6 references, should be addressed to Director of Administrative Services - DODP, Joint Oceanographic Institutions, 1755 Massachusetts Ave, NW, Suite 800, Washington, DC, 20036-2102. Review of applications is expected to begin 27 October and will continue until the position is filled. JOI, Inc. is an equal opportunity employer.
Assistant Program Director, Ocean Drilling Programs
Joint Oceanographic Institutions

Joint Oceanographic Institutions, Inc. (JOI) is seeking qualified applicants for the position of Assistant Program Director of the Ocean Drilling Program (ODP) and the JOI/U.S. Science Support Program (JOI/USSSP).

The primary responsibility of the Assistant Program Director is supporting the Director and Associate Director in providing scientific direction and leadership to the ODP and USSSP. Duties include all aspects of program development, organization, management, and delivery, such as proposal evaluation, project development, program planning and budgeting, and related administrative duties. The position requires excellent oral and written communications skills, and will require travel.

Applicants must have a Ph.D. or equivalent experience in marine geology or geophysics or a related disciplinary field, and have a minimum of one year of research, administration, and/or managerial experience. Knowledge of ODP, USSSP, NSF and a broad understanding of the US and international academic scientific communities is highly desirable.

Qualified applicants should submit a curriculum vitae and three names and addresses of references to Denise Lloyd, Mgr. HR, JOI, Inc. 1197-APDODP, 1755 Massachusetts Ave, NW, Suite 800, Washington, DC, 20036-2102. For technical information, please email dlloyd@brook.edu. Additional corporate and program information is available at www.joi-odp.org. Review of the applications will begin immediately, and will continue until an appointment is made. EEO.
8.1.3 UPDATE ON THE IMPLEMENTATION OF ELECTRONIC PUBLICATIONS

Background:

The ODP Publications Policy, approved by EXCOM in Oslo in June 1996, was reviewed at the June 1997 EXCOM Meeting. Dave Scholl, Chair of the JOI Publications Steering Committee which was set up to advise JOI on the implementation of ODP Publications Policy, reported on the recommendations of this committee to EXCOM. Following a lengthy discussion, EXCOM passed the following motion:

EXCOM Motion 97-2-6

The EXCOM recognizes that the Publications of ODP are an important mechanism by which the principal legacy of the program, its scientific findings, are conveyed to the scientific community, and by which an additional legacy, the scientific samples, are described to the community. We appreciate the concern of the SCICOM for the importance of this communication mechanism. We also appreciate the work that the Publications Committee has done to poll our community about its capability and its continuing commitment to advise us about the access and format of our publications.

The severe fiscal constraints imposed by member contributions anticipated for Phase III of ODP require that we exercise great care in balancing priorities for the ODP activities. First and foremost among those are to foster technological innovation and make progress toward implementing our science plan. Budget projections from our operators indicate that it would be impossible to do so if we accept the extra costs associated with the recommendation of the JOI Publications Steering Committee to continue traditional paper publication of the Initial Reports (IR) for several years.

As a result, the EXCOM reconfirms its 1996 schedule for introducing electronic and CD-ROM publication of the IR and SR volumes and phasing out paper publication. We agree to cap the volume publication budget at the levels indicated in the JOI model for FY 99 and beyond.

We have asked JOI to explore outsourcing publications as an additional option and have also asked that they check obligations for publications in the MOUs and seek relaxation of these obligations if necessary.

At the August SCICOM meeting, JOI proposed a plan to implement the EXCOM Motion and address community concerns. The plan involved the publication of an ~150-pg. soft cover companion book to the CD, containing items such as the Leg summary, location maps, significant highlights of the Leg, and core photos. This would allow users to peruse the book to glean the basic information about the Leg, and then for details, use the CD or go to the WWW. The other option presented to SCICOM was that of printing upon request
the full IR contained in the CD at a local copying shop. By consensus, SCICOM recommended that the JOI Publications Steering Committee be asked to define the contents of the CD-ROM companion volume, and assist JOI in identifying appropriate test user groups during the further development of the electronic publications products.

**SCICOM Motion 97-2-9**

SCICOM applauds efforts to provide cutting-edge technology in data access and electronic publication that will result in greater access of ODP data and scientific interpretations to the global scientific community. However, SCICOM is aware of the concerns of some of the ODP community in not producing a paper version of the Initial Reports volumes during a transition period. Therefore, SCICOM support the production of an abridged companion paper version to accompany the CD, and suggests that JOI investigate subcontracting publication of a paper copy on user-demand and at cost to the user for a transition period.

---

**CURRENT STATUS**

Following the August 1997 and June 1997 SCICOM and EXCOM Meetings, respectively, electronic versions of the “official publications” of ODP are now defined as follows:

- **Initial Report Volumes on CD (beginning with leg 176)**
  A CD-ROM for each leg, consisting of scientific overview & site chapters (incl. site chapters, etc - much the same as the current IR), plus a printed leg summary and CD users guide of up to 150 pages. The IR (CD-ROM) will be “portable document format”, or PDF. All CD information (that previously in the printed IR) will be computer monitor viewable and printable in a compatible format. Individual text, data tables, core descriptions and photographs will be downloadable into other digital forms and/or applications. Some search capability will exist. A Web version of the IR (CD-ROM) is being produced by the Science Operator.

- **Scientific Results Volumes on CD (beginning with leg 169)**
  A CD-ROM for each leg, consisting of detailed post-leg scientific analyses - much the same as the current SR) The format of the SR(CD-ROM) will also be PDF, carrying the same limited search and download capability, as described above.

Just as the present printed copies of the IR and SR satisfy the MoUs, JOI believes that these products also satisfy MoU requirements. Each non-US ODP member will be provided with one hundred copies (along with the same free distribution in the United States) and continue to have the right to re-publish information from these CD-ROMs (on the same basis), in full or in part, without payments to, or additional agreements with the United States.
Implementation of electronic publications

Initial Reports Volumes through 175
- Book: scientific overview & site chapters (incl. site summaries, operations reports, prime data, core descriptions)
- CD:
  - large tables & data sets (incl. GRAPE, magnetic susceptibility), logging figures
  - viewable/printable volume of book material

Initial Reports Volumes 176 and beyond
- Book: printed booklet - CD guide, leg introduction and site abstracts (hole info, coring summary, lithology and principal results)
- CD: booklet/CD guide, site chapters and prime data (viewable and printable)
- WWW version of all CD material

Scientific Results Volumes through 169S
- Book: peer-reviewed papers. Publication allowed in outside literature 1 year post-cruise from 160. 500 page SR from 161; no reprints.
- CD: Entire volume and data sets (if provided by author)

Scientific Results Volumes 169 and beyond
- Book: none
- CD: Entire publication (volume and data sets) published on CD
- WWW version of CD material

Publications - Long Term Timetable

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“On Demand” Printing Service for the IR(CD)

As a special support service to Program users who wish access to printed volumes from ODP CDs, the Publications Department at TAMU has been asked to investigate establishing a contract with an outside printing company for on-demand hard copy
production of each leg IR. This externally printed IR represent the material contained on the electronic versions of the IR and SR volumes. An “on demand” commercial printer would receive, process, dispatch and bill for all orders for printed volumes. It is not proposed that there be any payments, either way, between the printer and ODP-TAMU. The cost of printing would be to the user, not to the Program. The selection criteria used in assessing any RFP responses would involve guarantees of turnaround, price per page, quality, and specifying the minimum numbers of orders needed for economic viability. This printer would not be licensed to supply digital versions of IRs - only hard copy, as is presently provided. That hard copy version, essentially no different from the current printed IR and SR, would also be “copyright free” (like the PDF CD versions) and could be reprinted, in part or in whole in any JOIDES institution - from the hard copy. This should also satisfy MoU requirements on the right to freely re-publish Program information.
8.1.4 OUTSOURCING OF ODP PUBLICATIONS

Action Sought:

EXCOM is asked to review and comment on JOI’s response to EXCOM Motion 97-2-7 regarding the outsourcing of ODP publications.

Background:

As a result of extensive discussion concerning the potential increase in the cost of ODP publications, and the results of the review by the Inspector General of the National Science Foundation, EXCOM passed a series of motions addressing ODP publications. The implementation of these directives was summarized in the previous section.

All changes in publications must be consistent with the MOU’s signed by all partners of ODP. The specific article of the MOU states:

Article 9 - Initial Reports of the Ocean Drilling Program
Scientists from (the country) will have access to Ocean Drilling Program data and core samples and the right to use, reproduce and adapt such data. The (national representative organization) will use reasonable endeavors to ensure that participating (country) scientists shall provide the scientific data resulting from site surveys and laboratory analyses in time for preparation of the Proceedings of the Ocean Drilling Program, or their equivalent. One hundred copies of each volume of the official scientific publications will be provided to the (national representative organization), or its nominees for free distribution among scientific establishments in (the country). These volumes may be re-published in (the country), in full or in part, without payments to, or additional agreements with the United States. The (national representative organization), or its nominees, will provide the National Science Foundation with copies of all publications from (the country) that are based on program material.

As noted in section 8.1.3, the publications changes implicitly state that the electronic CD-ROM IR plus the printed guide and the CD-ROM SR volumes are the official publications of the Ocean Drilling Program. The total cost savings anticipated from these changes will be presented at the EXCOM meeting. Further savings in publications require improved efficiencies and/or significant changes in the content of these publications.

At the June 1997 EXCOM Meeting, the issue of outsourcing ODP publications was discussed and JOI was instructed in EXCOM Motion 97-2-7 to look into possible opportunities.
EXCOM Motion 97-2-7
EXCOM asks JOI to provide advice on outsourcing all or part of ODP Publications. This advice should include electronic publications options and consider legal and financial issues. JOI should report their findings at the January 1998 EXCOM Meeting.

JOI RESPONSE

Two possible options to be considered in “outsourcing” include:

**Option 1.** Contracting out all publication activities now managed by the Science Operator.

**Option 2.** Contract out “value added” post ODP produced publications.

**ISSUES**

The overriding constraint on simply moving from in-house publication to outsourcing is found in the key provisions of the MoU’s between full non-US members of ODP and NSF. Thus, any proposal for outsourcing must address three critical issues:

1. Free access to ODP data and core material by scientists in all member countries, and the right to use, reproduce and adapt such data;

2. The free distribution to each member of one hundred copies of each volume of the official scientific publications of the Program; and

3. The right of each ODP member to re-publish such volumes, in full or in part, without payments to, or additional agreements with the United States.

- At present we have had discussions with one publishing company, Elsevier Science Ltd. These discussions indicate the Elsevier is not interested in Option 1. Issues of the MOU are of concern. Thus, it is not clear if other scientific publishing companies would be interested.

- Elsevier did express interest in Option 2. This option has the potential of representing little cost to ODP. Elsevier is interested in conducting a market analysis, but issues in the MOU again become important. Issue of copyright and loss of market represented by free access to ODP “official” publications.
• The issue of “free access to ODP data” is unchanged by the present proposal. It will remain a responsibility of the Science Operator at Texas A&M University to provide for free access to both the JANUS database and core repositories.

A Model for Publication Outsourcing

The following is a proposal that will (a) continue to meet MoU requirements in a post-printed IR/SR world; (b) provide for access to a printed IR at no cost to the Program; and (c) provide for an enhanced suite of ODP publications, independent of the special requirements of MoUs, through commercial outsourcing. This model seems to have the greatest potential for increasing ODP publications distribution with the least additional cost. In addition it assures long term stability in primary publication quality and flexibility provided by the ODP Publications Department.

• The primary responsibility ODP Publications Department would remain the assembling, editing and preparing the IR and SR contributions of each scientific party in digital form (e.g., the PDF product). All downstream aspects of publication production, including Web publication and distribution of enhanced products would be “out-sourced” to an external service provider.
  - a outsourcing strategy might involve utilization and retraining of TAMU production staff and project management of that team by the external service provider.
  - an alternative approach might involve TAMU joint venturing with an outside publisher to achieve a similar end.

• Part of the “core business” of ODP, if not necessarily the Science Operator itself, would still be to continue to ensure that the Janus Database was freely available on the World Wide Web, on a continuing basis. The basic data contained in the customized data tables that are published in each IR and, eventually, each SR would be available in Janus and accessible to any user. ODP needs to re-affirm that provision of digital data tables specifically for Janus is a condition of SR publication and access to core repositories.
  - maintenance and development of Janus could also be carried out by the appropriate ODP team, possibly under the guidance, or the project management of an external service provider.

• The Science Operator would issue an RFP, seeking a commercial publisher to:
  - Provide the “value added”, or enhanced EIR and ESR, on a commercial basis, as well as a commercial World Wide Web site. The “value adding” would involve not only down-loadable access to digital text, figures and tables, but images, photos and video clips, links to higher resolution images, sophisticated search engines, database manipulation tools, and navigation tools connecting the enhanced CDs, the Web and the Janus database. The publisher would hold undisputed copyright over these enhanced products and services.
  - Also provide for hard copy (only) production of the ODP publications, at no cost to ODP, for as long as demand exists. Issues of turnaround, price per page charged
to users, quality, and minimum numbers of orders before discontinuation of the service would be considered. The publisher is free to set a commercially viable price for this service, and would be solely responsible for its administration. This version is also "copyright free". If the preferred commercial publisher for the enhanced CD and Web services is not willing to provide this service, or is uncompetitive, a separate RFP should be issued.

- It is important that the commercial publisher be able to demonstrate that the EIR and ESR CDs will be readable as operating systems are upgraded over the coming years. The commercial publisher would also be expected to aggressively market both the enhanced CD-ROMs and access to its Web site, on a commercial basis. Selection of the commercial publisher would be judged on criteria such as cost to the Program of the "free" distribution of the basic IR(CD) and SR(CD) mandated under the MoUs, extent of "value adding" with the enhanced products (EIR, ESR and Web site), and the indicative marketing strategy.

- While the commercial publisher would supply, at an agreed cost, sufficient copies of the IR(CD)s and SR(CD)s to meet at least ODP's basic obligations under MoUs, JOI proposes that any US user or non-US member should have the option to exchange free distribution of the basic, copyright-free IR(CD) and SR(CD), for access to the enhanced products (EIR, ESR and Web site), provided that the user and/or non-US member acknowledges that the enhanced products are not copyright-free. It would be hoped that this exchange could be at no additional cost to, and would include a matching number of free access licenses to the commercial Web site for each US user and/or non-US member. It is also hoped that widespread exercise of this option might eventually lead to the phase-out of the basic IR(CD) and SR(CD).

- there are questions of possible additional costs implied here, that cannot be addressed without resorting to the recommended RFP process.

ODP-TAMU's Publication Services should be permitted to "compete" in the process, in order to demonstrate whether predicted savings and benefits are real, or otherwise. This competition might take the form of TAMU responding to the RFP in a "joint venture" with a commercial publisher. If outsourcing is found to be cost-effective and beneficial, then an implication of the preferred model is that Information Services and Publication Services at TAMU might well be rationalized. Some staff declared excess to this reduced TAMU requirement might, through retraining, be available to the commercial publisher, including on site. If Information Services is to stay in TAMU, one option might be to merge it with Publication Services, along purely "project" lines, but with distinct technical supervision. Alternatively, Information Services, less that portion needed to support the computer network at TAMU, might also be considered for contracting out.

Summary

Outsourcing ODP publications has the potential to provide a more sophisticated and scientifically usable product to a wider user group, at a possibly reduced cost. These assertions can only be tested through an RFP process. It is acknowledged that, with the
continuing expenditure of some Program funds, TAMU could, and probably would in time, provide a product just as sophisticated as that outlined here.

Resource/Responsibility Assignments

- Contractually, JOI has delegated responsibility for publications to the Science Operator. Therefore the contracting out of the post-editorial stages of publications should be a responsibility of ODP-TAMU. However, if TAMU Publications Dept. is to be encouraged to put in a separate or joint venture response to the RFP, then the process must be managed externally - say, by JOI. If EXCOM makes a recommendation along the lines suggested above, action to issue an RFP should be immediate.

- Once a decision is made to link ODP electronic publications to the Janus Database, then consideration should be given to either the merger of the Publication Services Department and the Information Services Department at ODP-TAMU, or to the contracting out of Information Services, itself. Recommended action by early FY99.

Reporting Structure

Manager, Publications to Director, Science Operations, TAMU; Program Director to EXCOM.
8.1.5 JANUS STATUS REPORT

Janus, ODP's new relational database system, was successfully deployed on the JOIDES Resolution last January (on Leg 171) and has been serving as the central system for data capture since then. TAMU's prime subcontractor in this endeavor, Tracor Applied Sciences, received formal acceptance of the "Leg 171 deployment version" of Janus from TAMU on 29 October 1997. This version included the capability to capture data for approximately half of the ODP data types. Since then, new versions or "builds" have been deployed on the ship with additional data capture utilities. With these new builds, the Janus system is now managing all routine ODP data with the exception of visual core descriptions (VCD) and a few physical property data types. Sedimentary and structural VCD data are being captured with a new acquisition system that will be compatible with Janus by Leg 178. Leg 183 is the target for the completion of the Janus hard rock VCD system.

Some members of the JOI Janus Steering Committee (SC) sailed on Leg 174B this summer to test the Janus system and to develop user requirements to complete Janus Phase I, which encompasses more than 95% of the entire Janus project. As EXCOM members will recall, Phase I is building the database structure, data acquisition systems, and reporting functions for all data that are currently captured during drilling legs. This will be completed in FY98. Leg 174B was selected because it was a short leg with CORK and logging objectives. This allowed committee members to work with Tracor and TAMU personnel in the shipboard laboratories without affecting the science objectives of the leg. The leg was a great success scientifically and for the Janus project. The SC made a significant number of recommendations for improvements to the existing system and developed a detailed plan for completion of the remaining software utilities. At its last meeting in early November, the JOI SC reviewed these recommendations with Tracor and TAMU and most are now being implemented. Detailed minutes from this meeting are available from JOI.

The first public release of Janus data (besides to shipboard scientists) will occur in February, 1998, when the one-year moratorium for Leg 171 data expires. TAMU is currently preparing their WWW interface to Janus, dubbed "JanusWeb", in preparation for this release. This release is being advertised and promoted (with posters, handouts and a computer demo) at the ODP booth at the Fall 1997 AGU meeting.

Now that the development stage of Janus is coming to an end, the JOI SC has focused on the long term operation and maintenance of this database management system. Janus now forms the foundation for ODP data management and it's changing the way science is conducted on the drillship. As such, the SC recommended that TAMU conduct a detailed review of the shipboard staffing needs for this system. The SC thinks it prudent to review and possibly modify the ODP/TAMU technical staffing plan which developed at
the beginning of the Program and has undergone relatively minor revisions since then. The plan should now include Janus operation and maintenance as major foci.

The migration of pre-Leg 171 data into the Janus relational database system looms on the horizon. Here is a chronological synopsis of activity on this front. TAMU issued a request for proposals for this task in February. A bidders conference was held at TAMU in March. The proposal deadline was in April. The JOI SC recommended that data be migrated on a site by site basis where highest priority sites (and data types) are completed first so that the relational aspects of Janus can be utilized sooner. The best and final offers were received by TAMU in June. On July 7, 1997, TAMU announced that the British Geological Survey (BGS) was considered the successful offerer. The BGS strategy is to migrate one data type at a time into Janus. Contract negotiations are pending. Funding for this effort and its priority remain outstanding issues.
8.1.6 EXCOM PUBLIC AFFAIRS SUBCOMMITTEE UPDATE

The EXCOM subcommittee for Public Affairs (Nowell, Orcutt, Biersdorf, Feary - alt Mayer) will meet the day before the official EXCOM Meeting begins, Sunday, 18 January, 1:00 PM. The subcommittee will review activities to date, approve future plans and prepare for any issues that will be brought to the attention of EXCOM. Following that meeting, Pamela Baker-Masson, Public Affairs Director, will give an oral report to EXCOM.

**Draft Agenda**

1. Six Month Activities Report
2. Cape Town port call/ South Africa strategy
3. EXPO’ 98
4. 1998 calendar year Public Affairs Plan
5. Budget
JOI PUBLIC AFFAIRS

Leg 174A and the New York Port Call
Numerous and ambitious activities were organized for Leg 174A and the New York Port Call. Helicopter trips to the ship were coordinated for the media (NHK TV, BBC TV, CBS TeleNoticias, Associated Press, New York Times, Washington Post, USA Today, National Public Radio and EOS) and US Congressmen and Capitol Hill Staff. Due to a last minute schedule change, the US Congressmen and Capitol Hill Staff were unable to attend but inroads had been made to reach this important audience.

While the ship was in port, VIP guests were invited to tour the JR Saturday afternoon and then enjoy a dinner aboard the Intrepid Sea-Air-Space museum sponsored by Schlumberger. The dinner included speakers from Sedco-Fořex, NSF, JOI, LDEO and keynote speaker William Broad from the New York Times. Additional media visited the ship on Saturday as well.

On Sunday an “Open Ship Day” was organized for the academic community in the region and ODP family. Approximately 400 guests toured the JR, viewed educational displays, attended scientific presentations and enjoyed brunch. This event was sponsored by JOI/USSAC. ODP also hosted Schlumberger investors onboard the drillship for tours on Monday. A complete Public Affairs Report is available upon request.

Estimated audience reached through media coverage:

<table>
<thead>
<tr>
<th>Medium</th>
<th>Audience</th>
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<tbody>
<tr>
<td>Television</td>
<td>35 million</td>
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<tr>
<td>Radio</td>
<td>8 million</td>
</tr>
<tr>
<td>Newspapers</td>
<td>4.5 million</td>
</tr>
<tr>
<td>Wire Services</td>
<td>&gt; 2 million</td>
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**Total** 49.5 million
SMITHSONIAN/ODP COLLABORATION
The National Museum of Natural History at the Smithsonian Institution opened the “Blast From The Past” exhibit on Friday, 27 June. The exhibit features the K/T Boundary core from Leg 171B. The museum estimates 1.5 million visitors will stop at the display located in the Paleobiology Hall. The museum has already prepared a replica to replace the original core when it returns to the repository in April 1998. The replica core will extend the life of the exhibit for several months, if not years. Accompanying the exhibit is a 2:14 minute video about ODP and the JOIDES Resolution, funded by USSAC.

A press conference was held on opening day. Speakers included: Mr. Robert Fri; Director of the Museum; Dr. David Falvey, Director, ODP; and Dr. Brian Huber, Exhibit Curator and member of the Leg 171B scientific party. The media coverage was extensive and included TV, radio, wire services and newspapers.

In collaboration with the Museum, JOI developed a poster highlighting the exhibit of which 5,000 copies were printed. JOI distributed posters to all international partners, subcontractors, NSF and the Natural History Museum. Posters were also sent to key elected officials and Capitol Hill staffers accompanied by a letter from Admiral Watkins.

The images, text and design have been made available to all ODP partners. Upon request, JOI will supply the material for duplication.

Public Affairs was able to interest Science Teacher in the K/T Boundary Core. They have agreed to include the poster as an ‘insert’ in the upcoming May ‘98 issue. The insert will be accompanied by an article with activity plans written by an education specialist. This issue of Science Teacher will be circulated to over 27,000 high school teachers throughout the United States and overseas. The article and activity plans will be made available to all ODP partners.
The Museum reopened the Hall of Geology, Gems and Minerals in September. ODP is represented in a permanent display which includes a drill bit, photo, text and related samples. Robert Fri, Director of the Museum, has invited Admiral Watkins, Dr. Neal Lane and appropriate staff members to the Museum to commemorate the successful collaborations. This will be scheduled in early 1998.

CAPE TOWN PORT CALL
Several events were planned for the Cape Town Port Call, 10 - 14 Oct. Activities included VIP tours of the ship, a VIP reception with scientific lecture, ship tours for the media and scientist interviews and public tours. Over 80 guests from the academic community, industry, diplomatic community, Navy, local businesses and various Government ministries attended the VIP events on Friday. ODP received extensive media coverage including TV, wire services and newspapers. Approximately 100 members of the public toured the drill ship on Saturday. A complete Public Affairs Report is available upon request.

Under the leadership of John Compton, UCT has organized a steering committee to oversee the follow-up efforts with government, national funding agency and industry. We anticipate that funding for this membership will come primarily through industry. The steering committee met and toured the ship during the December port call. The draft proposal for South African membership should be completed by March in order for Public Affairs to support the steering committee for the last April port call.

ODP BROCHURE
In coordination with subcontractors and the JOIDES office, Public Affairs finalized the new general ODP flyer. The flyer will be printed at the beginning of 1998 pending China's entry into the Program. The brochure will be distributed to all members. Additionally, the brochure will be translated and printed in French, Japanese, and German.

EXPO 98
Public Affairs pursued an opportunity to participate in the Canada Pavilion. An interactive educational computer game was planned for development, however, these plans have been put on hold due to the costs involved.
Instead, Public Affairs will pursue opportunities at the 6th International Conference on Paleoceanography which will take place in Lisbon during Expo.

**AGU**

In collaboration with JOIDES, TAMU and LDEO, Public Affairs coordinated the triple-space ODP booth for the AGU Fall Meeting. This included the development and production of signs, artwork and handouts. A press release highlighting ODP science was written for distribution in the press room. The booth had several hundred visitors during the conference. The following items were distributed: 200 K/T Boundary posters, 375 “ODP’s Greatest Hits” brochures, Borehole Research Group posters, 60 “Planet in Motion” videos, 200 “From Mountains to Monsoons” CDs, 750 IR & SR CDs and hundreds of handouts including contributions from Canada, Germany, Japan and the UK.

**GAS HYDRATES CAPITOL HILL BRIEFING**

Public Affairs is in the process of organizing a briefing for the individuals drafting the “Methane Hydrate Research and Development Act of 1997.” The purpose of this bill is to promote the research, identification, assessment, exploration, and development of methane hydrate resources.

An ODP expert will be invited to address appropriate hill staffers about ODP science as it relates to hydrates. The main objective for ODP is to raise awareness about the Program on Capitol Hill and to potentially earmark funds to support ODP hydrates research. The briefing will take place in February 98.

**PRESS RELEASES**

Edited news releases for Legs 173, 174A & 174B, 175, 176 and 177.


**SCIENTIST SUPPORT**

Public Affairs worked with scientist Tim Bralower of UNC to publicize his work and theory of sudden global warming on volcanic eruptions in the Caribbean. The following newspapers and magazines picked up the story and mentioned ODP, JOIDES Resolution, and/or NSF: USA Today, Seattle Times, Science News, New Scientist, Earth, Environmental News Network (on-line) and SCIENCE (on-line).
ODP/TAMU PUBLIC INFORMATION

- Organized several events for the Halifax port call in June. Two local broadcast news stations toured the ship and televised their reports regarding ODP activities. Additional newspapers also interviewed scientists and published articles on ODP. More than 65 guests visited the ship during a VIP reception hosted by ODP and the Bedford Institute in Dartmouth.

- Escorted a BBC film crew aboard the ship during Leg 174A. BBC is developing a two-part series regarding ODP research. These programs are scheduled to air in May.

- Organized ship tours for the NY port call. About 500 visitors, including one broadcast news team, toured the ship during the three-day port call.

- Negotiated terms with a news writer with Scientific American to sail on the *JOIDES Resolution* during Leg 174B and document ship activities on SA's web site, which has about 100,000 hits per day. The article contains 65 pages of information regarding Leg 174B operations, history of ODP, ship operations and lifestyle environment.

- Completed the new ODP video, "A Planet In Motion." The video is currently being translated into five additional languages for international distribution.

- Completed Public Information web page located on the ODP/TAMU web site.

- Hosted Ms. Pamela Baker-Masson for a two-day public affairs strategy meeting.

- Manage ODP merchandise products for sale on the *JOIDES Resolution* and at ODP/TAMU. Scientists, technicians and ship's crew purchase more than $10,000 worth of t-shirts, coffee mugs, hats, duffle bags and other items containing the ODP logo.
• Sent an invitation to Tim Friend, science writer for USA Today, to participate on Leg 179. Mr. Friend will cover the hammer drill test and the NERO project.

• Currently working with RDF Television, a UK production company, to sail a film crew during an upcoming leg. RDF is working with The Discovery Channel to document the activities of a typical ODP expedition.

• Prepared news releases for Legs 173, 174A and 174B, 175, 176 and 177.

• Prepared materials for ODP/TAMU Annual Report.

• Began preparing for activities during the Townsville port call.

• Updated 35mm slide set.

• Updated b-roll tape.
8.2 ODP/TAMU MANAGEMENT REPORT

Action Sought:

EXCOM is asked to review and comment on the ODP/TAMU Management Report.

Reports will be "taken as read" with no formal presentation to the committee. It will be assumed all EXCOM members have read these reports. There will be an opportunity for EXCOM members to ask questions of the "presenter" to clarify a particular issue in the report, or to ask for additional information.

Executive Summary

Against a backdrop of 4 years of level funding and a re-organization, both of which have contributed to a 20% reduction of our budget, the extent of the services we provide has increased and the quality of our delivery of these services remains high. This is directly attributable to the superb staff that serves the Program. Below programmatic highlights for the last six months are identified.

Contract Extension: A memorandum of agreement has been agreed to between ODP/TAMU and the ship owners that extends operations through FY2003 at rate that is beneficial to all parties.

Deputy Director Staffing: Dr. Tim Francis, Deputy Director of Operations, will leave ODP/TAMU on Dec. 31, 1997 after seven and half years of dedicated service. Dr. Jack Baldauf, Deputy Director of Services, will assume these operational responsibilities covered by Dr. Francis and I will cover those responsibilities related to oversight of functional activities. This step is taken to focus resources where they can most benefit the Program. As such, one Deputy Director position will be left vacant for at least six months giving us time to determine whether or not this method is workable.

Expansion of the Gulf Coast Repository: Construction starts Jan. 1, 1998 on the addition to the our faculty at ODP/TAMU. At a cost of 3.2 million dollars, the new addition will create new repository space for cores to be recovered during the next phase of the Program and desperately space for operations.

Science Operations: All the legs during the last six months (Legs 173-176) have been exceedingly successful and all cruise staffing is complete through Leg 180. Staffing for Legs 181-183 is in progress.
positions and exchange of information. The initial phase was completed on October 24, with the delivery of two copies of the MOA to ODL and their forwarding of the document to the SEDCO/Forex headquarters in France for review and signature by the corporate President. The signed document (attached) was returned on November 25, 1997. Throughout the course of these negotiations, JOI was kept abreast through electronic and verbal reports.

Provision for Capital Repairs/Ship’s Repair: With agreement by NSF to fund up to $6 million for FY99 capital investment/ship repair projects (the $6 million equates to $5 million in FY92 dollars escalated), the initial element of the 1992 MOA was satisfied. ODP/TAMU is presently reviewing the list of requirements submitted by ODL prior to selection of any capital improvements/ship’s repair projects. The long lead time of some of the proposed activities will require expenditure of funds in FY98 and NSF has made funds available in FY98 and FY99 for these activities. Additionally, any work that can be accomplished prior to arrival at the selected dry dock will enhance the completion of work at the facility and permit the return of the vessel to its primary scientific mission in an expeditious manner. An agreement was reached that the negotiations of dry dock activities and the issue of costs (ODP as opposed to ODL) would be a separate issue outside the MOA and subsequent subcontract modification, but ODL has agreed to pay any costs in excess of the $6 million. As a result of the capital improvements and repair costs, many of the standard five year dry dock costs will be either directly or indirectly associated with these major projects and, therefore, should be charged to the $6 million allocation. The impact is that NSF will be providing funds in addition to the amount approved for normal operations of ODP.

Escalator Selection: Throughout the early summer, TAMRF (Fiscal) researched different indices (e.g., consumer, producer, employment, industry related, etc.) in preparation for an exchange with ODL. In accordance with the agreement, four indices, three producer and one consumer price, were provided. ODL provided six potential price indices; including four producer, one employment and one industry. During the initial negotiation meeting, discussions centered on the selection of a representative index that was affordable. Issues that concerned us were the out year impact adjustments to the escalator would have, and the desire to find an indicator that was least affected by sporadic cycles of the market. Various scenarios were negotiated. For example, there was discussion of breaking up the day rate into its components and using specific indices for each element. ODL proposed use of industry related indices that have seen significant increases (ranging from 13.2% to 155% from 1992 to May 1997), while TAMRF concentrated on price indices that provided stable, but industry related elements. The final result was the selection of the consumer price index-urban (CPI-U). Of the ten indices considered, the CPI-U provided the best combination of stability and being representative, while remaining affordable to ODP. Over the past five years the CPI-U had an annual average increase of 2.7%. The current producer price index (PPI) had an average increase of 2.5% over the course of the last 12 years and had an average increase of 2.1% from 1992 through May 1997. The cost impact to ODP, assuming a worst case, is estimated at $742 a day. If the difference in the two averages is compared over the period 1992 to May 1997 (CPI @ 2.7 vs. PPI at 2.1%), the increase is
Drilling Services Department: The ship has performed very well the last six months meeting, or exceeding, the stated scientific objectives of each leg. Initiatives to install a primary active heave compensator on the JR in late 1998 are underway, and an engineering test of a hard rock coring system is on schedule for testing on Leg 179 (Spring 1998).

JANUS: The last six months have been very productive with the installation and acceptance of Phase I of JANUS. In addition, plans are in place for the completion of the remaining JANUS applications in FY98.

Electronic Publications: The transition to full electronic publication of the IR volumes is progressing and scheduled for early in FY99.

Management

Extension of the subcontract for Operation of the JOIDES Resolution: The following is a report on the negotiations involving the extension of the subcontract for operation of the JOIDES Resolution past the current term of agreement (September 30, 1998) through September 30, 2003. A memorandum of agreement (MOA) has been agreed to by the President of SEDCO/Forex, Mr. Rick McPherson, representing the Texas A&M Research (TAMRF) and myself. A copy of the signed MOA has been forwarded to IOI (Dec. 1, 1997) and ODP/TAMU is awaiting approval. When formal approval is in hand, formal construction and finalization of the appropriate subcontract modifications can take place.

A short summary of negotiations follows below.

Goal: The goal of this effort was to secure the services of the JOIDES Resolution through September 30, 2003, and at a level affordable to the Program.

Background: In March 1992, SEDCO/Forex and TAMRF, on behalf of ODP/TAMU, executed an MOA. This agreement stipulated that utilization of the JOIDES Resolution (then referred to as the Sedco/BP 471) would (1) continue through September 30, 2003, (2) provided funds of up to $5 million in 1992 dollars, escalated in accordance with Special Provision 35 of the subcontract, were made available for capital investments/ship’s repairs and (3) allowed for changes to the escalator used in calculating day rate increase/decrease and the escalator threshold.

Negotiations began on July 3, 1997 with an exchange of economic indices between Overseas Drilling Limited (ODL), the organization that manages the operations of the vessel for SEDCO/Forex, and TAMRF.

Formal meetings were held in the local offices of ODL on July 23, August 25, August 26, September 25 and October 23. There were numerous meetings and electronic/written exchanges of information not involving actual negotiations, but directed at clarification of
approximately $167 a day. Considering the current energy exploration day rates are ranging between $75,000 and $150,000 a day, we believe the selected index offers excellent affordability to ODP, along with greater stability than the indices proposed by ODL. It was also agreed that the day rate on October 1, 1998 would be adjusted by 3% or what the actual increase is using the current PPI, whichever is the greater. We do not anticipate an increase greater than 3%. Additionally, we agreed to adjust the difference among day rates to their original level of $1,000. For example, and assuming a 3% increase on October 1, 1998, along with the inclusion of additional crew currently billed separately, the following would be the three principal rates:

- Operating $46,863
- Cruising $45,863
- Standby $44,863

(Using the operating rate as a starting point for comparison, the total increase from the current rate is $2,311. By removing the expense associated with the existing additional personnel, the net increase is $1,365. Over the course of one year with 30 days of standby, 75 days of cruising and 260 days of operating, the increase would be $498,225.)

Adjustment Threshold: The current subcontract contains an adjustment criterion of two percent with the provision of an adjustment threshold no more often than every six months. The extension MOA retains the two percent, but changes the frequency of adjustment to no more often than five months. Based on our review of the performance of the CPI-U over the last ten years, the cost impact should be marginal. This "marginal" impact assumes a stable economy. We estimate that the CPI-U will increase more frequently than the current PPI. For example, in FY99 the CPI-U is programmed for adjustment on the seventh month. We estimate that the PPI would not increase until the ninth month. Using 2.2% as the projected growth and 43 days at the operating rate, 7 days at the cruising rate and 10 days at standby, the quicker increase equates to approximately $61,266 in FY99. In FY00 use of the PPI would result in another adjustment. Using the CPI-U will probably result in two adjustments in FY00. The increase in cost associated with these adjustments is approximately $220,000. In FY01 each indicator would be programmed for two adjustments; however, the phasing of these adjustments would result in an increase of approximately $65,000 only. FY02 would produce at least one adjustment per indicator, an increase due to phasing of approximately $190,000, with FY03 producing one by using the PPI and two using the CPI-U. This last year adjustment will be by far the most significant impact, resulting in an estimated $325,000 increase. While it may appear that $325,000 is a large amount, it is less than 1.5% of the total estimated day rate.

Additional Compensation: NSF agreed to provide up to $1 million in additional compensation, provided the vessel owners agreed to an affordable day rate significantly lower than the current rates for energy exploration. The additional compensation is to be
paid in October of each fiscal year for five years and is not affected by escalation. Since NSF has indicated funds associated with this action will come from other NSF funding external to ODP, there is no cost impact on normal Program funding.

Additional Engineering Support for Capital Improvements/Ship's Repairs: ODL agreed to provide additional engineering support for the effort to be conducted on the JOIDES Resolution during FY98 and FY99. The total cost of this support is over $480,000. TAMRF agreed to provide up to $280,000 ($180,000 in FY98 and $100,000 in FY99) to offset some of the expense involved. As a result of the extensive efforts required to plan and execute the FY99 dry dock activities, additional engineering support is required. The current ODL College Station staff has only one engineer. The in-house engineer is dedicated to performing the day-to-day activities required to keep the drillship operating in an efficient manner. Neither ODL nor ODP can sacrifice the current services being provided to maintain the operation of the vessel. The additional engineer will plan, monitor, coordinate and execute the approved dry dock repairs and capital improvements, including specific ODP generated projects. The Program will benefit in this effort by using ODL to include and submit in bid packages for ODP related projects at dry dock. This will reduce administrative effort on the technical and administrative staff and allow for lower costs associated with the combining of dry dock related projects. Additionally, having the additional expertise of an ODL shipboard engineer available during the planning and execution stages should aid in completion of dry dock preliminary and on-site effort.

ODL Accommodations Dry Dock Cost: Initially ODL's position was that no corporate funds should be used for any direct or indirect FY99 dry dock costs; however, in the final agreement, they agreed that the cost of accommodations for their crew would be for their account. As with every dry dock or crew change, ODP shall continue to be responsible for the costs associated with the port call crew change. It was agreed that the issue of other dry dock related costs cannot be addressed until the list of potential projects is provided by ODL. There is no cost impact.

Elimination of Riser Drilling: The current subcontract contains the requirement for riser drilling. This would be a costly exercise in terms of money and preparation time for ODP and ODL. In review of objectives for the extension period, and after consultation with the technical staff at JOI, both parties agreed that the requirement should be deleted from the extension MOA and subsequent subcontract modification. There is no cost impact associated with this issue.

Stevedoring Costs: The current subcontract provides for ODP and ODL to pay for stevedoring costs associated with their individual activity at port call. The extension MOA changes this responsibility to being the sole responsibility of ODP. A review of historical cost associated with stevedoring charges reveals that the majority of these costs have been for ODP's account. By assuming this responsibility, the administrative effort for TAMRF in researching, reviewing, verifying and separating invoices will be reduced. The cost impact is estimated at $12,000-$48,000 annually.
Port Call Logistics: Since reorganization, ODP has been investigating methods of reducing its pre and post port call expenses, while maintaining the efficiency that has existed over the course of the Program. ODL agreed to conduct a no cost trial where their on-site logistics coordinator would also handle ODP logistics' activity. If the trial is successful, ODL agreed to assume the port call logistics coordination responsibility for $800 a day while in port. The cost impact for this option is between $19,200 and $24,000 annually. It was agreed that any decision to pursue this course of action would await the results of the trial and follow-on discussions. Either party to these negotiations may cancel this arrangement at any time.

Incorporation of Additional Personnel into the Current Complement and the Day Rate: The additional personnel supporting shipboard operations has remained constant for many years. These personnel, while reimbursed at a day rate equivalent, have always been billed separately. TAMRF agreed to include these costs in the new day rates effective October 1, 1998, provided they retain the right to remove any of the additional personnel with a 60-day notification. If any personnel are removed, the day rate will be adjusted downward accordingly. In another action relative to personnel, TAMRF agreed to increase the actual rates of compensation by $84.41 a day to accommodate the actual cost of shipboard personnel based on a change in corporate policy. The total cost of this action is $30,809.65 annually.

Advance Payment Change: The current rate for advance payment of the day rate is standby. The MOA, and subsequent subcontract modification, will change the rate to cruising. Because most of the month is reimbursed at the highest rate of all, operating, the use of the median rate was believed to be more equitable. In the past, interest on the advance was calculated on the entire amount of the advance paid from the date funds were received by ODL to the end of the month, using the rate on the date of receipt for a 30 day CD for the amount in excess of $100,000 based on a 365 day year. Under the proposed extension agreement, the interest on the advance, using the same CD rate criterion, will be calculated on a daily basis against the remaining advance not yet earned or the unliquidated balance of the advance. This will reduce the amount of interest returned at the end of the month by approximately $2,000 or $24,000 annually. The exact amount of the reduction will depend on how the days are broken down among operating, cruising and standby over the course of the month.

ODL Port Call Crew Change Payment Method: The current method of payment for ODL port call crew change is reimbursement for actual cost within the terms of allowability. This is an exhaustive method on both ODL and TAMRF in determining the allowable costs and associating them with individual crew members. By entering into a firm fixed price arrangement, the administrative effort will be significantly reduced, allowing both staffs to concentrate on more important matters. Considering that this item is currently a reimbursable and significant hours of effort will be eliminated because the detailed examination of numerous invoices will not be required, there should be no significant overall cost impact associated with this action.
Considering that at the start of the negotiations, ODL proposed a $4 to $5 million increase to their compensation package and maintained up until the agreement was finalized that a $3 million increase was justified, the final agreement is more than satisfactory to the Program. The agreement involves an increase to normal Program funding between $645,500 and $686,300 in FY99, along with the $280,000 for the additional engineer ($180,000 in FY98 and $100,000 in FY99). More importantly it allows the continuation of the finest international science program in existence today.

Staffing: Dr. Tim Francis, Deputy Director of Operations, left the program on Jan. 1, 1998. For the last 7 1/2 years Tim Francis has had responsibility for overseeing all those issues directly related to our operations at sea (e.g. hazard assessment, operational requirements, clearance approvals, site adjustments, development of the schedule for our legs). Tim has been extremely effective in his oversight of those issues and it is a goal of mine to maintain this standard of excellence following Tim's departure.

The challenge is how best to achieve this goal in the context of overarching programmatic requirements and the resources available to the Program. The solution I have chosen is a departure from the structure in Headquarters that we have been using for the last year. I would like to share with you why I arrived at this decision.

In order to insure that ODP/TAMU maintains its excellent delivery of our operational requirements and services, I am transferring these responsibilities to Dr. Jack Baldauf. Jack has been with ODP/TAMU for more than 10 years. By virtue of the fact that he has served this organization as a staff scientist, Assistant Manager and Manager of Science Operations and, most recently, as Deputy Director of Operations, he is well qualified to maintain our excellent record of leg operations.

The question then becomes how to accommodate the tasks and responsibilities that are related to the oversight of our functional departments. As EXCOM will remember, the one new position created during re-organization was the position Deputy Director of Science Services. This position was established to enable headquarters to more effectively manage the activities of our functional centers. I appointed Jack Baldauf to this position and during the last year Jack has made it possible for Headquarters to work more effectively with the functional departments helping to resolve problems and better integrate activities. I certainly do not want to give up the benefits that a Dual Deputy director model brings to ODP/TAMU, but in a financial environment where every activity must be assessed in terms of benefits and costs, I believe it is a necessity to continuously measure our present structure and allocation of personnel against evolving programmatic requirements and available resources. Although in FY99 we are anticipating an increase (1.5%) in the Program's budget for the first time in five years, we are facing additional budgetary pressures associated with our revised FY99-FY2003 contract with ODL (approx. 660 thousand in FY99) additional costs associated with drydock (approximately 310 thousand) as well as a challenging science plan and compelling infrastructural needs. These additional encumbrances must come from our limited special operating expense category and savings found within our core budget. Each budgetary cycle provides an opportunity to see if our resources are best configured
to meet our service requirements and each vacancy is an opportunity to determine whether or not the position is still a priority when measured against compelling institutional necessities. It was when I measured the total cost associated a Deputy Director position (salary, benefits, travel and associated expenses) against not only the benefits that this position brings to our organization, but a host of important programmatic needs, that I decided to leave the position unfilled and to assume those responsibilities assigned to the Deputy Director of Services for myself.

I am the first to admit that if this was the best of all possible worlds, I would not hesitate to maintain two Deputy Director positions given the documented benefits. At a time, however, when each passing year has me asking each of the functional departments of ODP to do more with less, I believe that Headquarters must also rise to the occasion and find ways to free resources. I will, however, treat this change as an experiment and the position will be left vacant, but not eliminated, so that the position can be filled at a later date if it is deemed necessary.

Expansion of the Gulf Coast Repository: The plans for an addition to the existing ODP/TAMU building are in place and ground is scheduled to be broken Jan. 2, 1998. The delivery of the new addition which will include 11,000 sq. ft. (1021 sq. m) of new repository space, as well as about 5000 sq. ft. (465 sq. m) of office and meeting room space is scheduled for January 1999. Construction costs (3.2 m) are being contributed by Texas A&M University.

Science Services

Staffing of key positions in the Science Services Department created during the reorganization at the beginning of 1997 was completed during the summer with the appointments of the Department Manager, Supervisor of Technical Support and the Curator. The Department is now up to speed and has been able to continue to support the participating scientists commenting on the capability, quality, and commitment of our technical support staff.

Science Operations: The attached tables (Tables 1-5) summarize the operational results of Legs 173, 174A and B, 175 and 176 each recorded significant operational successes. Leg 174A demonstrated that the Resolution can hold position and drill effectively even in water depths less than 100 m. Setbacks on this leg were a result of geology, rather than technical difficulties. Leg 174B saw the successful deployment of a CORK at Site 395, in a hole that was first drilled by Glomar Challenger more than 20 years ago. Leg 175 achieved the remarkable recovery of more than 8 kms of core, an all time record for core recovery in a single leg. Leg 176 deepened Site 735 to more than 1.5 kms recovering 865 meters (percent recovery 80%) before the drill string severed and the hole had to be abandoned because of the junk. Despite this disappointing conclusion of this leg, we clearly demonstrated that at this location we are capable of continued deep drilling in ocean crust, apparently to unlimited depths provided the hole is planned and cased appropriately.
Staffing Information: All cruises are completely staffed through Leg 178, and staffing for Leg 180 is near complete (i.e. all invitations have been issued, but some have not yet responded). Leg 179 is primarily an engineering test leg and will have a skeleton scientific party. Staffing for Legs 181-183 is in progress. Drs. John Ludden and Terry Plank have been invited to serve as co-chief scientists for Leg 185. Dr Plank has accepted, but Dr. Ludden has not yet responded to the invitation. A summary of the present staffing situation can be found in Table 6 - Leg Information (attached).

With the continual help of all partners, we have been able to maintain a good proportional balance of scientists from the participating countries on ODP legs. See Figure 1 (attached).

Drilling Services Department

Leg Operations: The program has been faced with logistically challenging portcalls with demanding requirements and all portcalls have been successful with the ship leaving port in a timely fashion.

Leg 175: During Leg 175, thirteen sites were occupied off the western coast of Africa (Congo, Angola, Namibia, and South Africa), and 40 holes were drilled using advanced hydraulic piston coring and the extended core barrel method. Leg 175 established a new core recovery record with greater than 8,000 meters of sediment obtained.

Leg 176: Leg 176 was devoted to the deepening and logging of ODP Hole 735B, located on a shallow bank along a transverse ridge of the Atlantis II Fracture Zone, Southwest Indian Ridge. During this leg, a hole initially cored to 500 mbsf on Leg 118 was deepened more than 1000 m to a total depth of 1508 m.

Leg operations were truncated by the failure in the 5" drill pipe connection 1403 m up from the bit or 1231 m above the top of the 172 m long BHA. Initial fishing attempts recovered 497m of 5" drill pipe but another failure in the recovered drillpipe occurred 906 m above the bit. Numerous additional fishing attempts failed and the ship departed for Capetown leaving ~900 m of 5" pipe in Hole 735B. Post cruise review suggests that it would be more advantageous to return to the Hole 735B vicinity and commence a new hole than to return to Hole 735B and continue fishing operations.

Hard Rock Drilling: The Hard Dock-Re-Entry System consists of a unique set of drilling tools that are designed to create a re-entry hole on sloping, hard rock seafloor. The objectives of such a system are to (a) spud in on bare sloped hard rock, (b) drill into hard rock with an improved rate of penetration, (c) carry casing into the hole along with the drilling tools, and (d) achieve a setting depth adequate to structurally support re-entry. The hard rock re-entry system is being developed around a water hammer to be compatible with ODP's existing casing program. Because the heart of the system is a
hydraulic hammer, actuated by seawater, this project has been referred to in the past as the Hammer Drill-in System. The other components being developed are retractable and eccentric bits, a hydraulic actuated casing running tool, a casing hanger latch system, latch type free fall re entry cone, and a harden casing shoe.

Overall the project is on schedule and within the project budget. Additional testing was performed by the manufacturer of the hammer in Canada after controlled tests at the Rogaland Research Facility (Norway) were conducted in late September confirming hammer acceptance for sea trials. The internal coated hammer operated continuously for 32 hours and the rate of penetration was reported at 4-5 times that of a standard tricone rotary bits. Additional testing of the hammer will continue for Shell, Talisman, and Petro-Canada in late January.

ODP/TAMU plans to sea test a 10 1/4" water hammer to drill-in 13 3/8" casing into hard rock on the Southwest Indian Ridge during Leg 179 (April 1998). The specific objective is to determine the technological feasibility of utilizing a hydraulic hammer to drill-in casing strings into hard rock in deep water from a floating vessel. The test results will be utilized to develop a subsequent top and bottom hammer system and later, a drill-in hammer system for larger casing systems.

Active Heave: Active heave compensation is the adaptation of computer technology to ship movement sensors in order to hydraulically move the heave compensator in cycle with ship heave, rather than to allow the passive heave compensator to react to heave forces. The significant difference is that the active system is responsive enough to reduce ship heave to some small threshold amount due to systemic friction. However, this technology does not address activities that occur below the ship, such as drill string reaction to dynamics positioning, ocean currents, heave friction, WOB drill-off and hole friction as effectively as it deals with ship heave.

Recent advances in petroleum exploration include "smart" tools that can be adapted to isolate the bottom-hole assembly (BHA) from the remaining ship heave and drill string dynamics and to provide the necessary conditions for coring at the seafloor. Diamond coring requires higher rotational speed than is routinely available from the JR, but the greater rotational speed could be supplied with down hole motors. Allowable WOB variations is also much less than for rotary cone bits. Seafloor solutions may involve the adaptation of such "smart tools" as a WOB sub and vertical thruster to provide downward force-on-bit, much like the existing motor driven core barrel. These options will be investigated with guidance from TEDCOM and the science community in FY98 to establish which are appropriate for program utilization.

ODP/TAMU is currently exercising the software simulation model to characterize the Active Heave system designed by Retsco Inc. This software model is designed to predict the drill pipe motion using ship motion data gathered during Leg 174A. Purchase of the heave compensator will follow with installation and commissioning completed prior to Leg 183.
**Information Services**

The last six months have been very productive with the installation and acceptance of the Phase I of JANUS. In addition, plans are in place for the completion of the remaining JANUS applications in FY98. Below, please find a list of activities associated with the JANUS project which have occurred during the past 6 months (please reference the JOI contribution on this subject for additional information).

Phase I of JANUS system was evaluated by JANUS Steering Committee on Leg 174B and found to meet initial requirements and expectations. A relatively few number of outstanding errors were found to be fixed by Tracor.

Errors found during Leg 174B were corrected and tested on shore during Leg 175 and a new version to be tested for ODP acceptance was installed on Leg 176.

Testing performed on Leg 176 and the JANUS Phase I system initially deployed on Leg 171 was accepted.

JANUSWeb applications which provide access to JANUS data installed on ship and shore.

Work has begun by Tracor for the JANUS Below-The-Line (BTL) items with a planned completion date of February 28, 1998. These items resulted from the JANUS Steering Committee meeting held November 2-3 at Tracor in Austin.

- Completion of JANUS data model
- Age/Depth model
- Data editors for JANUS data
- ThermCon data entry via spreadsheet
- Modify paleo for saving default environments
- Barcode reports / upload changes for XRD
- Change depth precision in applications and JANUS database
- Make beaker entry required field for Physical Properties samples
- Provide a Paleo taxa dictionary edit window

Work has begun on the Visual Core Description (VCD) Project (JANUS Phase II). Tracor is currently working on their portion of VCD which involves getting the AppleCore data to and from the JANUS database. In early 1998, Mike Ranger will commence his portion of modifications to AppleCore for this phase. This phase will result in being able to import a digital core image into the AppleCore application.

ODP developed JANUS applications installed and placed into production mode:

- Color Reflectance data upload and edit
- Crymag data upload and edit
- Graphical display of MST data
Feedback from recent shipboard participants regarding the JANUS Phase I applications has been very positive, with comments indicating that JANUS is a significant improvement over the old system.

**Publication Services**

*Books Produced:* In the second half of 1997 the following books/electronic products have been produced:

- 166 IR (book, CD, and web)
- 167 IR (book, CD)
- 168 IR (book, CD)
- 169S IR (book, CD)
- 170 IR (book, CD)
- 150X SR (book, CD)
- 150X IR Supplement (book, CD, and web)
- 154 SR (book, CD, and web)
- 155 SR (book, CD)
- 156 SR (book, CD)
- 158 SR (book, CD)

**Transition to Electronics Publications:** The electronic publication SOE was slated to begin in October 1997. In September TAMU provided JOI with a list of issues that needed to be clarified before TAMU could move forward on the planning of the new all-electronic publication products. TAMU did receive feedback in early December, and is now moving forward on the new electronic product definition.

Since September two test volumes, 166 IR and 154 SR*, have been published on the WWW. Both volumes are in PDF format, viewable using Adobe Acrobat viewer software. The table of contents for both volumes and the abstracts for the SR papers are also available in HTML format. Some of the highlights of these publications include color graphics, digital images of the core, tables presented as ASCII files, and leg core data from the ODP database.

In October the content for the booklet that will accompany the IR CD-ROM was finalized. The department’s next step will be to design the format for the all-electronic version of the IR volumes, which will be distributed beginning with Leg 176. Prototype development and testing will take place during the first half of 1998.

The department is eager to receive feedback on all of our test electronic materials. To date, our staff have developed this product based on the structure and style of the traditional Scientific Results format. From this stage forward, we anticipate seeing an evolution in the format of the Proceedings volumes. This will naturally occur as you, the
users, get accustomed with using publications electronically and provide us with feedback on your likes and dislikes, and as we design the publications in the all-electronic environment and incorporate new technological advances to improve our product.

*URLs for the volumes:
  http://www-odp.tamu.edu/publications/154_SR/INTRO.HTM
  http://www-odp.tamu.edu/publications/166IR/INTRO.HTM
SHIPBOARD PARTICIPANT TALLY

LEG 101 - LEG 177

USA (939)
Aus/CAN/KOR/CT (149)
France (153)
FRG (187)
Japan (149)
UK (161)
USSR/RUS/ITA (17)
Other (13)
ESF (149)
Non-ODP (48)

Total: 1943 Participants
Plot includes Staff Scientists and LDEO Logging Scientists

Figure 1
<table>
<thead>
<tr>
<th>SITE 1065 (PB-3H) TOTALS:</th>
<th>SITE 1066 (PB-3H) TOTALS:</th>
<th>SITE 1067 (PB-3A) TOTALS:</th>
<th>SITE 1068 (PB-3C) TOTALS:</th>
<th>SITE 1069 (PB-7H) TOTALS:</th>
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**LEG 173 TOTALS:**

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<th>RECOVERED (g)</th>
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**LEG 174A TOTALS:** 202 1544.4 846.35 61.3% 1498.4 3042.8 715.05 29.79

Table 2
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<td>69.5</td>
<td>126.0</td>
<td>5.33</td>
</tr>
</tbody>
</table>

Table 3
<table>
<thead>
<tr>
<th>DATE</th>
<th>SET 1</th>
<th>SET 2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>June</td>
<td>127.8</td>
<td>132.1</td>
<td>259.9</td>
</tr>
<tr>
<td>July</td>
<td>136.3</td>
<td>137.8</td>
<td>274.1</td>
</tr>
<tr>
<td>August</td>
<td>145.7</td>
<td>150.0</td>
<td>295.7</td>
</tr>
<tr>
<td>September</td>
<td>154.8</td>
<td>159.2</td>
<td>314.0</td>
</tr>
</tbody>
</table>

**Note:** The table represents data from various months, with each month showing the totals of two sets of measurements.
<table>
<thead>
<tr>
<th>Leg 176</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1388</td>
<td>37° 43.3828° S</td>
<td>57° 15.6006° W</td>
<td>731.0</td>
<td>122</td>
<td>1003.2</td>
<td>866</td>
<td>86.5</td>
<td>0</td>
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</table>

Table 6
<table>
<thead>
<tr>
<th>Leg</th>
<th>Area</th>
<th>Port of Origin</th>
<th>Days in Port</th>
<th>Cruise Dates</th>
<th>Staff Scientist</th>
<th>Co-Chief Scientist</th>
<th>Starting</th>
<th>Territory or Permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>175</td>
<td>Benguela</td>
<td>Las Palmas</td>
<td>10-14 Aug.</td>
<td>15 Aug. to 10 Oct. 1997</td>
<td>Carl Richter</td>
<td>Dr. Wolfgang Berger</td>
<td>Complete</td>
<td>Cameroon, Angola, Namibia, South Africa</td>
</tr>
<tr>
<td>177</td>
<td>Southern Ocean Circumpolar</td>
<td>Cape Town</td>
<td>10-14 Dec.</td>
<td>15 Dec. to 9 Feb. 1998</td>
<td>Peter Blom</td>
<td>Dr. Rainer Granzow</td>
<td>Complete</td>
<td>Antarctic Treaty, MARPOL Compliance</td>
</tr>
<tr>
<td>178</td>
<td>Antarctic Peninsula</td>
<td>Punta Arenas</td>
<td>9-13 Feb.</td>
<td>14 Feb. to 11 Apr. 1998</td>
<td>Gary Acton</td>
<td>Dr. Angelo Camerlenghi</td>
<td>Complete</td>
<td>Antarctica</td>
</tr>
</tbody>
</table>
8.3 WIREFLINE LOGGING SERVICE REPORT

Action Sought:

EXCOM is asked to review and comment on the LDEO/WLS Management Report.

Reports will be "taken as read" with no formal presentation to the committee. It will be assumed all EXCOM members have read these reports. There will be an opportunity for EXCOM members to ask questions of the "presenter" to clarify a particular issue in the report, or to ask for additional information.

EXECUTIVE SUMMARY

Management:
The FY 99 Logging Prospectus was prepared with input and review from ODP Logging Services scientists, JOIDES panels, and the proponents. The prospectus was presented to SCICOM/OPCOM at their August meeting.

Based on the SCICOM/OPCOM FY 99 program, a revised response to the RFP for the FY 99-03 ODP Logging Services contract was prepared and submitted to JOI. The revised proposal was based on actual FY 97 expenses and the FY 99 drilling program, including fixed costs (standard tools and insurance), base operations, and special deployments and developments.

Following the Leg 175 toolstring loss (see Leg 175 summary for details), an insurance claim was filed and a request was made to JOI for additional funds to cover the $50,000 deductible expense.

The New York City port call was extremely successful. Logging-related booths and displays coordinated by LDEO-BRG and Schlumberger were set up for public education opportunities. Port call activities also included VIP tours, a reception, general tours, presentations, and Schlumberger tours.

Cruise Highlights:
Wireline logging and Logging While Drilling (LWD) operations were conducted during Leg 174A (New Jersey Transect) in shallow water on the New Jersey continental shelf. These logs provided critical information during this leg, where good core recovery was severely hampered in the unconsolidated, sand-rich sediments of the New Jersey shelf.
High-resolution borehole images and elastic properties can be extracted from the FMS and Dipole Sonic Imager (DSI) logs from Leg 174B (CORK Hole 395A). The Azimuthal Resistivity Imager (ARI) data produced images that show the character and orientation of individual pillow basalts and the heterogeneity of crustal structures at a vertical scale of approximately 1m. This was the first time the ARI had been deployed by ODP.

**Developments:**
The ODP Log Database has been updated through Leg 175. On-line historical data for both wireline and Logging-While-Drilling (LWD) now exists for Legs 102 through 109, 113, 114, 116, 118, 119 (partial), 120, 122 (partial), 123, 129 (partial), 130 (partial), 131, 133-175, along with all available Initial Reports plots and documentation.

A catalog of the 90 holes of log data recorded during the Deep Sea Drilling Project has been prepared, which includes, among other information, the location of the holes, the logs recorded, and the format(s) available. A data CD-ROM is available from NGDC.

A new Inmarsat B system was installed on the JOIDES Resolution. This new system will facilitate the rapid and extremely consistent transfer of data to and from the ship.

The first shipboard tests of the DMT (Germany) Color CoreScan system were carried out during Legs 173 and 176. Scans of slabbed and whole round cores from both legs will be distributed on the Initial Results Data CD-ROM.

Final development of Splicer v2.0 software was completed in early June and installed aboard the JOIDES Resolution.

**I. MANAGEMENT**

The FY 99 Logging Prospectus was prepared with input and review from ODP Logging Services scientists, JOIDES panels, and the proponents. The prospectus was presented to SCICOM/OPCOM at their August meeting.

Based on the SCICOM/OPCOM FY 99 program, a revised response to the RFP for the FY 99-03 ODP Logging Services contract was prepared and submitted to JOI. The revised proposal was based on actual FY 97 expenses and the FY 99 drilling program, including fixed costs (standard tools and insurance), base operations, and special deployments and developments.

The FY 97 close-out report for the ODP Logging Services contract was sent to JOI.

Following the Leg 175 toolstring loss (see Leg 175 summary for details), an insurance claim was filed and a request was made to JOI for additional funds to cover the $50,000 deductible expense.
Meetings and Events
A meeting was held during the Halifax port call to train personnel from LUBR and IMT in project management techniques.

The New York City port call was extremely successful. Logging-related booths and displays coordinated by LDEO-BRG and Schlumberger were set up for public education opportunities. Port call activities also included VIP tours, a reception, general tours, presentations, and Schlumberger tours.

A delegation of Chinese scientists visited LDEO and, in addition to scientific discussions, was shown demonstrations of the ODP Logging Services web page and database, and participated in discussions about the current structure of LDEO-BRG and logging contractor functions.

The Borehole Research Group participated in the annual Lamont Open House. An exhibit was presented that highlighted ODP logging operations and the drilling program in general. Attendance at this Lamont-wide event was estimated to be 5,000 visitors.

The annual Schlumberger contract meeting was held at Lamont on September 9 to finalize the FY 98 contract and upcoming operations.

Sub-contractor meetings with representatives from LUBR and IMT were held in London in conjunction with the Borehole Imaging meeting and at Leicester University. Among the topics discussed were administrative issues including budgets, bimonthly reports, and invoicing procedures, as well as leg and development projects for FY 99 and LUBR’s role in the ODP Logging Services web page.

Personnel from LDEO, LUBR, and IMT participated in the ODP exhibit at the fall AGU meeting. In addition, a meeting of the management staff from LDEO-BRG and each of the sub-contractors was held to discuss FY 99 operations and planning.

Personnel
Adrian Newton resigned his position as Logging Scientist at LUBR.

Interviews were held to fill the position of Log Analyst at LDEO and Logging Scientist at LUBR.

The Schlumberger Logging Engineer in rotation on the JOIDES Resolution changed beginning with Leg 176. Mike O’Connell will sail through at least the next year.
II. STANDARD LOGGING OPERATIONS

Leg 173 - Iberia
The objective of Leg 173 was to drill an east-west transect of sites on the West Iberian margin to study the ocean-continent transition zone (OCT). A similar transect had already been drilled during Leg 149, which determined the landward and oceanward limits of the OCT. Log data were acquired in Holes 1065, 1068, and 1069:

<table>
<thead>
<tr>
<th>Cored Interval (mbsf)</th>
<th>Hole 1065A</th>
<th>Hole 1068A</th>
<th>Hole 1069A</th>
</tr>
</thead>
<tbody>
<tr>
<td>251-631.4</td>
<td>711.3-955.8</td>
<td>718.8-959.3</td>
<td></td>
</tr>
<tr>
<td>104-921</td>
<td>114-507</td>
<td>102-778</td>
<td></td>
</tr>
<tr>
<td>350-621</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In Hole 1065A, geophysical log data overlapped with a 350 meter cored interval of pre/syn-rift (? post rift) sedimentary rocks. In this zone core recovery was low (12%) so log data helped determine the lithostratigraphic units. Log data also provided more detailed sedimentary information, identifying layers dominated by clay, sand and calcareous fractions and their relative cementation state. Also, in the upper part of the hole, which was not cored, lithologic units described from Site 900 cores can be inferred from log data.

Site 1068 is located 600 m to the west of Site 900 on a topographic high which was previously drilled during Leg 149. Site 1069 is located 43 miles to the west of Site 1068 on the adjacent topographic high. At both sites (1068 and 1069) the overlap between log data and cores is restricted to an interval of 60 meters. Observed depth variations between correlated features is probably a function of varying sedimentation rates between the sites. Differences between Sites 1068 and 1069 suggest a greater rate during the Miocene at Site 1069 (top of the logged section), a slightly lower rate during the upper Eocene, and a similar rate during the middle to lower Eocene (below 600 mbsf) relative to Site 1068.

Leg 174A - New Jersey Margin
Wireline logging and Logging While Drilling (LWD) operations were conducted at Sites 1071, 1072 and 1073 in shallow water on the New Jersey continental shelf. These sites form part of a transect of holes from the slope (Leg 150) to coastal outcrops (150X and 174AX) that constitute the Mid Atlantic Sea-Level Transect.

<table>
<thead>
<tr>
<th>Cored Interval (mbsf)</th>
<th>Hole 1072A</th>
<th>Hole 1072B</th>
<th>Hole 1073A</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-307</td>
<td>300-359</td>
<td>0-664</td>
<td></td>
</tr>
<tr>
<td>152</td>
<td>0</td>
<td>663</td>
<td></td>
</tr>
</tbody>
</table>
Wireline logs and logging-while-drilling data provided critical information during Leg 174A, where good core recovery was severely hampered in the unconsolidated, sand-rich sediments of the New Jersey shelf. Shipboard log analysis (to be refined by shorebased work) provided information on: lithology, vertical trends in facies and bedding patterns, delineation of lithologic/acoustic discontinuities (i.e., seismic surfaces) and precise time-depth conversion for tying ties of core and log data to the seismic reflection profiles.

A preliminary integration of wireline and LWD data has been useful, both in assessing the character of unrecovered intervals and in calibrating the measurements. Log data quality are generally good to excellent, except in a few intervals where sand-rich, washed out intervals are encountered. These unconsolidated, sand-rich layers correlate to zones of low resistivity, velocity, and gamma ray values. Intermediate resistivity, velocity, and gamma-ray data correspond to silty intervals; clay-rich intervals are generally more consolidated and show high resistivity, velocity, and gamma ray values. The spectral gamma ray, as well as the photoelectric factor, identify high glauconite concentrations. Of particular note is an incompletely-recovered, glauconite-rich sand that logs show has variable thickness in each of the three holes it was penetrated. These holes were a total of 40 meters apart; the glauconite sand appears to rest directly on or a few meters above a regionally-significant unconformity. Two intervals of well-cemented glauconitic quartz sandstone can be detected by especially high resistivity, density, and velocity. Throughout most of Hole 1072B, FMS images delineate bed boundaries and internal structures such as slumping and bioturbation. High as well as low resistive spots in these images may indicate various kinds of nodules, clasts, and burrows, making these images valuable for facies interpretation.

Site 1073 contains a number of discontinuities and trends in physical properties measurements coinciding with observed lithologic changes, unit boundaries, and with interpreted seismic discontinuities. Natural gamma radiation measurements include a distinct downward decrease within the early-middle Miocene; this is near the predicted level of seismic discontinuity, and may reflect a maximum flooding surface. The Pleistocene section contains several upward-increasing cycles of natural-gamma values, which may reflect glacial-interglacial cyclicity. Resistivity appears to correlate mainly with porosity, as at other Leg 174A sites. Changes in pore-water chemistry appear to have
little influence on resistivity values. At first glance, resistivity measurements from cores appear to correlate well with those obtained by logging, as do velocities and density information.

Check-shot surveys were successfully carried out at Hole 1072B and 1073 at an average station interval of 25 m, using a Gl-gun acoustic source (the same source employed during site surveys). The velocity versus depth profiles obtained at these two sites refined the coarser resolution data available prior to drilling (mainly seismic stacking velocities) and provided for precise time to depth conversion in tying core and log discontinuities to the seismic reflection data.

**Leg 174B - Cork Hole 395A**

The objectives of Leg 174B were to reenter Hole 395A for downhole logging and a CORK experiment. The primary scientific objectives of the leg were (1) to document the in-situ physical properties and hydrogeology at this young crustal reference site, and (2) to test a hydrological model developed from observations obtained during three earlier reentries.

Shipboard analyses of the Leg 174B logs, and comparisons to Leg 45 core description and logs from Legs 78B and 109, clearly show that Hole 395A consists of definable layers of pillow basalts, massive flows, and fluid aquifers that correlate to changes in the resistivity, velocity, and bulk density logs. Distinct changes in the high-resolution temperature gradient log and anomalies in the Spontaneous Potential (SP) log indicate that at least two major aquifers are active in the hole at approximately 310 and 420 mbsf. Zones of high resistivity and high sonic velocity distinguish massive lava flows, and both resistivity and velocity generally increase towards the bottom of the hole. High-resolution borehole images and elastic properties can be extracted from the FMS and Dipole Sonic Imager (DSI) logs. The Azimuthal Resistivity Imager (ARI) data produced images that show the character and orientation of individual pillow basalts and the heterogeneity of crustal structures at a vertical scale of approximately 1 m. From the comparison of FMS and ARI images, the extent of pillows and flows near the borehole may also be distinguished. This was the first time the ARI had been deployed during ODP operations.

### Hole 395A

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>Triple Combo (mbsf)</td>
<td>0-603</td>
</tr>
<tr>
<td>FMS/Sonic (mbsf)</td>
<td>113-603</td>
</tr>
<tr>
<td>DSI (mbsf)</td>
<td>113-603</td>
</tr>
<tr>
<td>ARI (mbsf)</td>
<td>113-603</td>
</tr>
<tr>
<td>SP (mbsf)</td>
<td>113-603</td>
</tr>
</tbody>
</table>
Leg 175 - Benguela Current

The objectives of Leg 175 were to drill between eight and ten sites off the western coast of Africa (Angola and Namibia) to reconstruct the late Neogene history of the Benguela Current and the associated upwelling regime between latitudes 5°S and 32°S. Downhole logging was conducted at five sites during the reporting period to help achieve the above stated goals.

<table>
<thead>
<tr>
<th></th>
<th>1077A</th>
<th>1081A</th>
<th>1082</th>
<th>1084A</th>
<th>1085A</th>
<th>1087C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sonic/Induction (mbsf)</td>
<td>74-202</td>
<td>71-454</td>
<td>64-600</td>
<td>59-605</td>
<td>60-606</td>
<td>80-492</td>
</tr>
<tr>
<td>Density/Porosity (mbsf)</td>
<td>-</td>
<td>71-454</td>
<td>64-600</td>
<td>59-605</td>
<td>60-606</td>
<td>80-492</td>
</tr>
<tr>
<td>FMS (mbsf)</td>
<td>-</td>
<td>71-454</td>
<td>64-600</td>
<td>59-605</td>
<td>60-606</td>
<td>80-492</td>
</tr>
<tr>
<td>GHMT (mbsf)</td>
<td>-</td>
<td>71-454</td>
<td>64-600</td>
<td>59-605</td>
<td>60-606</td>
<td>80-492</td>
</tr>
</tbody>
</table>

In Hole 1077A, natural gamma ray correlates with core measurements and is a valuable indicator of coring induced deformation. The gamma-ray profile is correlated to the changing clay content of the sediment and clearly follows the glacial-interglacial stages of the oxygen isotope record. Due to their high resistivity, dolomitic layers in Hole 1081A are clearly identified in the FMS images, which exhibit layering that may be related to high porosity assemblages of diatomaceous microfossils. Together with Sites 1081 and 1083 and DSDP Sites 532 and 362, log data at Site 1082 indicate the varying hard and soft layers in a cyclical pattern which could indicate changes in the paleoclimatic history of the Benguela Current. Well-identified levels of high velocity, resistivity and low gamma-rays activity at Hole 1084A are mainly attributed to the presence of dolomitic layers and the logs in the upper interval and in Hole 1085A are strongly degraded by hole conditions.

Logging at Hole 1087C encountered serious problems when the sonic/induction toolstring got stuck while entering the pipe after the first run. Good quality logs were recorded with the seismo-stratigraphy tool string. In the upper 300 m of the logged interval, downhole measurements show very homogeneous patterns. The lower part of the logged interval is characterized by more variations in physical records, related to the carbonate vs. detrital content. Logging was aborted after the logging tool could not be retrieved and operations at Hole 1087C had to be terminated.

Tool loss report

On October 5, 1997 a wireline logging toolstring was lost following the successful completion of a logging run in Hole 1087C. A review of the tool loss account indicates that the standard procedures were followed, including the handling of the recovery attempts. Upon notification of the loss, BRG contacted the HRH Insurance broker to file a claim for the lost tools and submitted a request to JOI for the $50,000 deductible amount. The inventory of lost items is as follows:
Leg 176 Return to 735B
Logging operations started with a run of the Triple Combo toolstring with the dual lateral log (DLL). A successful temperature log was also acquired. This logging run indicated that the borehole is clear of fill nearly to total depth. The second logging run included the natural gamma sonde, the dipole shear sonic imager (DSI), and the Formation MicroScanner (FMS). The logging run was aborted, however, due to data acquisition difficulties, and plans were made to acquire the data at the end of the cruise.

Hole 735B

<table>
<thead>
<tr>
<th>Tool Name</th>
<th>Value</th>
<th>Insurer</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cable head</td>
<td>$10.7K</td>
<td>HRH</td>
<td>Claim pending</td>
</tr>
<tr>
<td>Telemetry cartridge</td>
<td>$11K</td>
<td>HRH</td>
<td>Claim pending</td>
</tr>
<tr>
<td>Natural gamma</td>
<td>$68.4K</td>
<td>HRH</td>
<td>Claim pending</td>
</tr>
<tr>
<td>Long spaced sonic</td>
<td>$71.5K</td>
<td>HRH</td>
<td>Claim pending</td>
</tr>
<tr>
<td>Dual induction</td>
<td>$154.6K</td>
<td>HRH</td>
<td>Claim pending</td>
</tr>
<tr>
<td>LDEO temp tool</td>
<td>~$27K</td>
<td>HRH</td>
<td>Self insured</td>
</tr>
<tr>
<td>Centralizer</td>
<td>-</td>
<td>HRH</td>
<td>Self insured</td>
</tr>
<tr>
<td>FMS centralizer</td>
<td>-</td>
<td>HRH</td>
<td>Self insured</td>
</tr>
</tbody>
</table>

Spectral gamma-ray, resistivity, and porosity logs show similar results to those of Leg 118. Differences in the caliper measurements between Leg 118 and Leg 176 appear to be due to miscalibration of the Leg 118 caliper tools.

Severe difficulties were encountered at the end of the cruise, prior to the final logging operations. Although Hole 735B had been drilled to about 1500 mbsf, about 1400 m of drill pipe had broken off in the hole and only 500 m of pipe had been recovered, leaving approximately 600 m of the hole open for logging. Of this section, the upper 500 m had been logged previously during Leg 118.

During the first logging run, good quality density, porosity and gamma-ray measurements were obtained from the bottom of the logging BHA to 10 meters above the hole obstruction, including very good quality resistivity data, even in the highly conductive Fe-Ti oxide intervals.

The FMS/DSI run produced good quality sonic log data with cross-dipole, P & S wave, dipole, and Stoneley modes recorded. The FMS data quality was poor from all attempts...
and has been attributed to the extreme resistivity contrasts between the Fe-Ti oxide gabbros (10 ohm-m) and the olivine gabbros (10,000 ohm-m). A final assessment of the data quality will be made after shore-based processing to address similar problems in the future.

The deployment of the Schlumberger-Prakla-Seismos-BKGT borehole VSP tool and data acquisition system was successful in achieving the primary objectives of the VSP experiment.

III. SPECIALTY TOOLS AND ENGINEERING DEVELOPMENTS

Wireline Heave Compensator (WHC)
The wireline heave compensator was repaired following reports of intermittent control problems. The Balluff linear position sensor was determined to be the source of the errors and it was replaced with a backup unit. In addition, a pressure relief valve was installed in the WHC’s hydraulic pump to ease system startup and therefore reduce the electrical load on the shipboard electrical system. Although this problem did not jeopardize the functionality of the unit, it would draw excess current at times and thus burn fuses. As a result of the valve installation, the high-current load problem has been corrected.

Temperature and Acceleration Pressure Tool (TAP)
This project is an initiative using the existing High Resolution Accelerometer (HRA) prototype to collect simultaneous temperature, acceleration and pressure measurements in open hole. The Temperature and Acceleration and Pressure (TAP) tool specifications and mechanical design include interchangeable electronic modules and a new digital telemetry system.

Active Heave Compensation
This FY 98 project to modify the TAP tool with a drillpipe seating mechanism will enable measurements of drillpipe acceleration while the heave compensator is active. Future developments with this new technology is under discussion with TAMU engineers.

IV. SHIPBOARD LOG ANALYSIS

Inmarsat-B
The Inmarsat B system installed on the Resolution in October 1996 was removed during the Cape Town II portcall in December. This unit was borrowed from SeaNet and was used extensively during this period for high speed transmission (56KB/s) of log data. It was replaced by a new terminal purchased jointly by TAMU and LDEO. In addition to the new satellite communication hardware for the ship, shore-based computer terminals containing special hardware and software have been configured at TAMU and LDEO to facilitate the rapid and extremely consistent transfer of data to and from the ship’s new system. Initial tests of the new system were successfully completed during Leg 176 with log data files being sent effortlessly. Testing will continue through Leg 178.
Core/Log Image Correlation Project
The first shipboard test of the DMT (Germany) Color CoreScan system was carried out during Leg 173. At the end of the leg all recovered core had been successfully scanned in the slabbed mode, and all basement pieces greater than 10 cm in the unrolled mode. The scanner performed well despite the vibration conditions in the core lab. Data was successfully recorded and backed up to optical disk. The time taken to scan the core was relatively short with respect to establish core description and analysis procedures.

During Leg 173, no FMS images were recovered from cored basement section, therefore reorientation of the core back to the geographic frame of reference was not possible. Excellent recovery, however, of several basement and lithified sediment cores have provided useful whole round image datasets from which structural data has been measured. Post cruise digital image analysis of the split core surface will use a variety of techniques to identify and quantify lithological diversity, modal mineralogy and the density and geometry of structural features and their relationship in time and space.

The system was also successfully used during Leg 176 where 90% of the recovered whole round cores were scanned. Following scanning, the digital images were stored on CD-ROM. As with Leg 173, expanded distribution of these images on the Initial Results Data CD-ROM is planned.

Core Log Integration Platform (CLIP)
Final development of Splicer v2.0 was completed in early June and installed aboard the JOIDES Resolution during the NYC port call. Software developments during this period focused development of the core-log depth integration software product, Sagon v.2.0. We were able to re-use many of the same modules developed for Splicer v2.0 in the new version of Sagon. The primary aim of the Sagon development effort is to create a graphic, interactive tool for depth-match core and log data. Two weeks were spent in late June developing a central numerical strategy for building core-log depth match functions whereby any set of core data can be transformed to equivalent log depths using the Sagon depth matching output functions. This development will continue for the remainder of FY 97 and into FY 98.

V. SHOREBOASED LOG ANALYSIS

ODP Conventional Data:
The following holes were processed at LDEO-BRG:
  Leg 172: Holes 1061A and 1063A
  Leg 173: Holes 1065A, 1068A and 1069A
  Leg 174A: Holes 1071G, 1072A, 1072B, 1072C, 1072D, and 1073A
  Leg 174B: Hole 395A

FMS processing:
The following holes were processed at IMT (Marseille):
  Leg 172: Holes 1061A and 1063A
Leg 173: Hole 1065A

GHMT processing:
The following holes were processed at IMT (Marseille):
Leg 171B: Holes 1050C, 1051A and 1052C

The following holes were processed at Schlumberger-Doll Research (Ridgefield):
Leg 171B: Holes 1051C, 1051A and 1052E

Temperature Processing:
Raw data collected by the Lamont temperature logging tool (TLT) between September 1988 and September 1992 (57 holes) have undergone the first two stages of processing: original data have been converted to pressure (bars) and temperature (degrees C) and reformatted. One format preserves a record of data every half second, as in the original files. A second format condenses the data to report a complete cycle of measurements (every 5 seconds): pressure, temperature with the fast thermistor, and temperature with the slow thermistor. Calibration pressures at mudline and bottom depths for each leg and hole have been measured allowing conversion of pressure data in the hole to depths (mbsf). Compiling and adding header information to each data file is currently underway. All temperature data collected by the Lamont TLT is being prepared for inclusion in the ODP log database.

Historic data processing
The following 18 historic ODP holes were revised at LDEO-BRG for inclusion in the online database:
Leg 108: Hole 661A
Leg 113: Holes 693A and 696B
Leg 119: Holes 739C and 742A
Leg 120: Holes 750B and 747C
Leg 122: Holes 759B, 762C, 763B, and 763C
Leg 124: Holes 767B, 768C, and 770C
Leg 126: Holes 791B, 792E and 793B
Leg 127: Holes 794B, 795B, 797B, 797C
Leg 128: Holes 794D, 798B, 799A, and 799B
Leg 130: Hole 807C
Leg 135: Holes 834B, 835B, 838B, 839B, 840B and 841C
Leg 156: Holes 948D and 949C

Hardware
The SparcStations on the JOIDES Resolution and at LDEO that are used for GeoFrame data processing were upgraded to UltraSparcs.
Other
Moe Kyaw Thu from the Ocean Research Institute, University of Tokyo visited LDEO for two weeks (July 23-August 6). While at LDEO, Mr. Thu worked on interpretation of FMS images from ODP Leg 127 and 128 (Site 794 and 797), and received training on the use of GeoFrame processing software.

VI. DATABASE

The ODP Log Database has been updated through Leg 175, including Schlumberger original and processed data (conventional, geochemical, and FMS), specialty tools (borehole televiewer, multichannel sonic, and temperature), borehole images and sonic waveforms.

On-line Database Development Project
On-line data for both wireline and Logging-While-Drilling (LWD) now exists for Legs 102 through 109, 113, 114, 116, 118, 119 (partial), 120, 122 (partial), 123, 129 (partial), 130 (partial), 131, 133-175, along with all available Initial Reports plots, processing documentation, and a filename dictionary relative to each hole. Proprietary data now includes Leg 170 through Leg 175.

A catalog of the log data recorded during the Deep Sea Drilling Project has been prepared, which includes, among other information, the location of the holes, the logs recorded, and the format(s) available. About 90 holes were logged during the program; most of the data, in LIS format, is available on a CD-ROM produced by NGDC.

Database work has focused on migration of historic log data and the development of forms to assist with internal reporting requirements and external data requests. Plans were also developed to include operational/technical data in the log database to assist third-party tool developers.

Representatives from GFZ (Potsdam), LDEO-BRG, and the University of Aachen met on September 19 in Germany to discuss log databases and future database development strategies.

Post-Cruise Distribution of Log Data
Composite logs of the processed data of Leg 172-175 were mailed to the members of the shipboard party who requested them.

The Leg 168-170 CD-ROM’s were sent to Sony for mastering.

Logging Summaries for Legs 169-173 were prepared. These summaries can be found on the ODP Logging Services web page at:
http://www.ldeo.columbia.edu/BRG/LOG_SUM/log_sum.html
VII. PUBLICATIONS AND REPORTS


Cambray, H., Downhole measurements: a way to record post-volcanic pulses and climatic evolution. Presentation to the University of Bordeaux.


Cambray, H., Physical properties used as a high-resolution tool for paleoceanography. Paper presented at the COSAIRE Logging Workshop in Brest, France.

de Larouzière, F.D., Pezard, P.A., Comas, M., Célérièr, B., Vergniault, C., Structure and tectonic stresses in metamorphic basement at ODP Site 976. Paper submitted to the ODP - Leg 161 Scientific Results.

Goldberg D., Shear wave logging in natural gas hydrates. Talk presented at AAPG.


Goldberg, D. Submitted abstract on riser logging technologies for discussion at CONCORD (in absentia).

Goldberg, D., Presented ODP review at U.S. National Rock Mechanics board meeting at Columbia U. in New York City.

Goldberg, D., The role of downhole measurements in marine geology and geophysics, Rev. of Geophys.


Higgins, S., Kreitz, S., King, T., and Goldberg, D., Magnetic polarity and susceptibility measurements from the Geological High Resolution Magnetic Tool (GHMT) at ODP Leg 162 Sites 984, 986, and 987 (Data Report), Leg 162 Scientific Results (Ocean Drilling Program).

Iturrino, G. Fracture permeability in active hydrothermal systems: Observations from downhole measurements in the Middle Valley of the Northern Juan de Fuca Ridge. Submitted abstract to The USSAC Publication “ODP’s Greatest Hits”.

Iturrino, G., Logging-While-Drilling techniques for difficult drilling environments: applications for the deep-sea riser system. Submitted and presented at the CONCORD meeting in Tokyo, Japan.


Jackson, P. D., Lovell, M. A., Harvey, P. K., and Williamson, G., Investigation of porosity styles of thin beds having low resistivity in vuggy carbonate sediments, presented at

Legall, B., Cambray, H., Evidence of strike-slip tectonics along the SE Greenland volcanic rifted margin from ODP microtectonic core data (Leg 152, Hole 917A). Paper submitted to Geology.

Legall, B., Cambray, H., Transcurrent faulting versus extensional tectonics along the SE Greenland volcanic rifted margin: microtectonic and Formation Microscanner data from ODP-drilled basaltic sequences (Leg 152, Hole 917A). Paper submitted to Tectonophysics.


Pezard, P., Comportement hydrodynamique de la croûte océanique supérieure: exemple du Site 504, Pacifique équatorial oriental. Presentation at “Colloque hydrodynamique et interactions fluides-roches dans les roches poreuses et fracturées” in Isteem, Montpellier.


Roehl, U., Abrams, L. J., Bralower, T. J., and Louvel, V., High-Resolution, downhole and non-destructive core measurements from ODP Leg 165: Application to the Late Paleocene thermal maximum in the Caribbean Sea, submitted for presentation at the AGU 97 Fall Meeting in San Francisco.


Sun, Y.F., Su, X. and the Leg 168 Shipboard Scientific Party Paleontological and paleoclimatic applications of core-log-seismic integration. Submitted abstract to The USSAC Publication “ODP’s Greatest Hits”.

9.0 PLANNING FOR IODP

Background:

THE INTEGRATED OCEAN DRILLING PROGRAM

The Ocean Drilling Program, as it is presently structured, is slated to end in the year 2003. In recognition of value of scientific ocean drilling to understanding Earth's history and systems, a substantial planning effort is currently underway for a new international Integrated Ocean Drilling Program (IODP) to extend scientific ocean drilling beyond 2003. This planning effort combines the scientific goals of the JOIDES ocean drilling community, which are set forth in ODP's Long Range Plan, with those of the Japan's OD21 (Ocean Drilling in the 21st Century) Program. IODP planning acknowledges that, in addition to drilling with the current ODP ship, the JOIDES Resolution, riser drilling capability is essential to achieving the ambitious scientific goals in ODP's Long Range Plan and the OD21 Plan. At the February 1997 Meeting, (EXCOM) endorsed the general proposal for the integrated management and structure of scientific ocean drilling beyond 2003, and agreed to the establishment of a standing "Management Committee", comprising representatives from the key organizations involved in the proposed future program, to carry forward planning.

Key Features of an INTEGRATED OCEAN DRILLING PROGRAM (IODP)

- International scientific planning
- International scientific operations
- Joint management of facilities and operations support
- International funding of program costs.

Facilities & Drilling - Post-2003 (Phase IV of the ODP 1996 Long Range Plan)

1. JOIDES Resolution-type vessel
   - Global capability
   - Shallow to intermediate drilling
   - Large spatial arrays of holes to study climate and oceanographic processes

2. Riser and Well Control Equipped Vessel
   - Global capability
   - Focused studies requiring deep drilling
   - Drilling in areas of hydrocarbons
   - Studies of deep composition and structure of crust and continental margins
Basic Assumptions

- Two drilling platforms beyond 2003
- CONCORD for the scientific guidelines
- A 2500 meter-class riser system
- The riser vessel would be constructed by Japan with in-kind contributions and international operation.

Basic Proposal

An organizational and management structure that very closely resembles the current ODP structure

- International partners - funding from the “international” partners
- Separate program offices for each vessel
- IODP - science advice from a single JOIDES-type structure
9.1.1 BACKGROUND ON IWG

Background:

Meetings on the Future of Scientific Ocean Drilling - (1) April 29, 1997, Leiden, the Netherlands; (2) June 11, 1997, Brest, France; and (3) September 22, 1997, Washington DC.

An ad hoc Meeting on the Future of Scientific Ocean Drilling was held on April 29, 1997 in Leiden in the Netherlands to initiate planning for an Integrated Ocean Drilling Program (IODP) among senior science administrators. At this meeting, the history of the Ocean Drilling Program, the goals of its Long Range Plan into the 21st Century, and proposed administrative arrangements for an IODP were reviewed. Discussions focused on (1) issues central to the future of ODP-like scientific programs beyond 2003, (2) the Japanese proposal to build and operate a riser drillship (OD-21), and (3) the concept of a multi-platform IODP.

Participants at the Leiden Meeting resolved that detailed analyses and planning to explore fully the concept of a comprehensive scientific ocean drilling program for the year 2003 and beyond should be undertaken immediately. To this end, an international working group of government officials, The International Working Group for an Integrated Ocean Drilling Program (IWG/IODP) was established. The Leiden Meeting reaffirmed that IODP planning should be based on a two-drilling-vessel program with ancillary capabilities for drilling in areas not accessible to the two primary vessels, and that the effort should involve a single, international, integrated program for scientific ocean drilling which will coordinate and combine all components within a broad organizational framework.

A series of actions leading to the potential implementation of an IODP were identified:
1. **Letter of Interest Phase** - Invited from interested governments, intergovernmental bodies, and scientific organizations in order to encourage the broadest possible participation in the IODP (Summer 1997).
2. **Letter of Intent Phase** - Invited from those governments, intergovernmental bodies, and scientific organizations who intend to work towards partnership in an IODP (Prior to construction of the Japanese riser vessel).

The IWG/IODP, met for the first time formally in Brest, France on June 11, 1997, following the June EXCOM meeting to continue IODP planning discussions, and again on September 22, 1997, in Washington DC. At this latter meeting, the IWG adopted the Terms of Reference for the IWG/IODP. In addition, membership was discussed. It was decided that IWG meetings will be open to all interested parties so as to foster
9.1.1 BACKGROUND ON IWG

communication and information exchange in planning for an IODP. Participation in
decision making, however, will be restricted to those who have submitted letters of
interest to join a future IODP.

The IWG also considered a proposal from JAMSTEC to Japan’s funding agency requesting
$20 million in funds over a three year period for the development of a “Sub-Seafloor
System Prototype”. This proposed engineering development includes a special core
sampling system and a long-term monitoring system. JAMSTEC indicated that although
the effort was not part of ODP, the JAMSTEC engineering group wished to work in
cooperation with ODP. The IWG welcomed the important initiative proposed by
JAMSTEC, and their desire to work cooperatively with the ODP, so that the resultant
systems would be of use to both the current ODP and the future IODP.

A primary outcome of the Washington meeting was a letter from the Co-Chairs of the
IWG, Dr. M. Purdy of NSF and Mr. Maruyama of Japan’s Science and Technology Agency
(STA), to the Chair of the JOIDES EXCOM, Dr. R. Detrick, to formally request the
assistance of the JOIDES Advisory Structure in tackling science planning, and the
important technical and organizational issues associated with the establishment of a new
scientific ocean drilling program beyond 2003. Specifically, JOIDES is asked to help
with (1) science, (2) technical, and (3) with budgetary planning in order to lay a firm
foundation for an IODP.
September 22, 1997

Terms of Reference
The International Working Group for an Integrated Ocean Drilling Program (IWG/IODP)

Background

The Ocean Drilling Program (ODP) is an international program of basic research in the marine geosciences which includes participation by science agencies and scientists from 20 countries. The program as presently structured, is planned to continue to 2003. The Ocean Drilling Program and its scientific advisory structure, JOIDES, concluded in its 1996 Long Range Plan that "central to scientific achievement of Phase IV (post 2003) is access to at least two deep-sea drilling platforms - one with capabilities of the present JOIDES Resolution and another with deep water well control (riser) capabilities."

The Science and Technology Agency (STA) of Japan proposed in 1994 an Ocean Drilling Program for the Twenty First Century (OD21) which includes plans for construction of a drilling vessel with riser capabilities. The scientific goals of the ODP Long Range Plan and the OD21 planning reports share common objectives.

Following a number of workshops, and coordination and planning discussions at various ODP meetings, the ODP Plan (Phase IV) and that for OD21, merged into a vision for an Integrated Ocean Drilling Program (IODP) for the Twenty-First Century based on two or more deep-sea drilling platforms. The transition from the current Ocean Drilling Program to the Integrated Ocean Drilling Program will be a complex and challenging task with requirements for new organizational, administrative, and financial arrangements.

Membership

The members of the International Working Group (IWG) shall be one representative each of potential sponsor organizations for the IODP that submit a Letter of Interest to the Secretariat.

General Purpose

The IWG will stimulate science planning for IODP and use these plans to address technical, organizational, and financial arrangements by which it may prove feasible to implement the IODP. It will keep itself informed of related scientific activities. The IWG/IODP will consult and draw on the expertise and capabilities of the existing Ocean Drilling Program, the Advisory Committee for Ocean Drilling of STA, and other planning and advisory structures.
for scientific drilling represented in IWG. The IWG will be a consultative body with decisions and recommendations developed by consensus procedures.

**Major Activities**

Science planning. The IWG will interact with JOIDES, Japanese planning elements and selected other planning and advisory structures for scientific drilling to ensure the scientific objectives are well defined, properly justified, and are consistent with potential financial resources and organizational requirements. The IWG will not itself conduct science planning, rather it will request expert advice from existing planning structures.

Technical issues. The IWG will not itself conduct technical studies on drillship capabilities or well control (riser) technology. The IWG will request expert advice from external technical groups or by commissioning external studies. The working group will focus on ensuring the proposed technical capabilities can meet scientific requirements and will provide a base for continued scientific and technical enhancements during the IODP.

IODP management models. The IWG will review and develop potential management models for the IODP. The working group will focus on organizational issues critical to providing operational and scientific resources and benefits consistent with program contributions.

IODP financial models. The IWG will review and develop potential financial arrangements for the IODP. The working group will focus on integrated models that address scientific benefits, operational considerations, and financial resource contributions in a balanced mode.

Organizational issues. The IWG will provide a forum to ensure international agreements, legal and liability questions, and contractual arrangements are addressed during the development of potential scientific, management, and financial plans.

**Meetings and Organization**

Initially the IWG/IODP will be co-chaired by senior representatives of the National Science Foundation (U.S.) and Science and Technology Agency (Japan) with responsibility for scientific ocean drilling. Also, initially secretariat support will be shared between NSF and STA/JAMSTEC. A "Record of the Meeting" will be provided by the Secretariat for all meetings. Individual IWG representatives will be responsible for their travel and meeting expenses.
Dr. Robert Detrick
JOIDES EXCOM
Department of Geology & Geophysics
Woods Hole Oceanographic Institution
Woods Hole, MA 02543

Dear Bob,

As co-chairs of the International Working Group (IWG) on an Integrated Ocean Drilling Program (IODP) for the 21st Century, we write to you formally to request the assistance of the JOIDES Advisory structure in tackling science planning and other important technical and organizational issues associated with the establishment of a new scientific ocean drilling program beyond 2003. Our group held its second formal meeting in Washington DC on September 22nd and adopted the Terms of Reference (see attached) that describe our goals and objectives.

At this time we ask for your help in three important areas:

1. An immediate objective of the IWG/IODP is to build upon the ideas outlined in Phase IV of the JOIDES Long Range Plan and stimulate the additional science planning activities needed to lay a firm foundation for the IODP. These science plans are needed to provide the International Geoscience research communities with the basis for making judgements about research priorities and to provide the cooperating Government agencies with the framework around which technical, financial and management plans can be built.

The recent CONCORD meeting held in Tokyo in July, was clearly an important step in establishing science plans for IODP, but this meeting was focussed upon deep riser drilling. We anticipate the need for additional planning activities that consider all science objectives. In addition, during or before the year 2000, we believe there exists the need for a major integrative activity (a COSOD III conference?) that would lay out the overall plans for a decade or more of scientific ocean drilling beyond 2003. We request that you consider these ideas and take the steps necessary to insure that these science planning activities move forward in a timely way.

2. A number of significant technical challenges must be resolved for a successful IODP. At least three major components must be addressed.
• the definition and development of required technical capabilities of a deep-water riser (well-control) system and compatible drillship,
• the definition and development of required technical capabilities of the potential non-riser ship(s), and
• the definition of technical and staffing requirements to support the science operations, data management systems, repositories, etc., for an integrated program with riser and non-riser ships.

The primary responsibility for engineering development must remain with line organizations or technical groups sponsored for identified tasks. The IWG will focus on ensuring the proposed technical capabilities can meet scientific and operational requirements. JOIDES, primarily through TEDCOM, is already active in oversight and definition of aspects of the technological requirements for IODP e.g. the engineering workshop in Yokohama, Japan. We anticipate the need for a more comprehensive approach including an integrated analysis of the three technical components listed above.

Therefore we request that JOIDES:

a) develop more comprehensive definitions of the tasks outlined above, and
b) as soon as is practicable, suggest to the IWG/IODP effective mechanisms by which these tasks may be completed.

We need an overall long range plan to tackle these difficult technical issues. We anticipate that a wide range of diverse activities may be required perhaps involving components of the existing Ocean Drilling Program, groups from the global drilling industry as well as JAMSTEC engineers.

3. The first requirement to establish an IODP is exciting well-defined science with important objectives, properly justified, that are consistent with potential financial resources. The initial cost estimates for operations of a two-ship IODP are about $120 - $130 million annually. We believe this estimate must be refined based on more complete analyses than have been done at this state of the planning process. In addition, the ability to provide specific estimates of various elements of operating costs will improve as the science, engineering, and technical development requirements are better defined.

An informal working group to look at program cost estimates met earlier this year and had an organizational meeting following the SCICOM meeting in April. NSF and JAMSTEC staff, the SCICOM Chair, and representatives of the current ODP contractors developed a preliminary agenda. We would like this working group to continue with appropriate JOIDES and IWG/IODP representation, and with your approval, we would like this group to continue to interact as needed with appropriate JOIDES advisory panels.
We are well aware that the tasks outlined in this letter are substantial, complex, and in some cases, necessarily ill-defined. We hope that the IWG/IODP can work closely with the JOIDES EXCOM over the next several months, both to develop more exact definitions of the necessary planning activities and to determine realistic timetables within which these important efforts can be completed.

Sincerely,

Dr. G. Michael Purdy  
Director  
Division of Ocean Sciences  
National Science Foundation

cc: Dr. Brent Dalrymple, Chair  
JOI Board of Governors

Sincerely,

Mr. Tsuyoshi Maruyama  
Director  
Ocean and Earth Division  
Science and Technology Agency
9.2.1 REPORT AND RECOMMENDATIONS OF THE CONCORD MEETING

Background:

As part of this planning effort for post-2003 scientific ocean drilling, a Conference on Cooperative Ocean Riser Drilling (CONCORD) was held in July of 1997 in Japan under the sponsorship of ODP, Japan's Science and Technology Agency and the Japan Marine Science and Technology Center. The conference was attended by over 150 international earth scientists and drilling engineers who restated the need for a new generation deepwater drilling vessel, equipped with a riser or riser-type system, that will allow access to deeper and more challenging earth environments.

At the CONCORD meeting, participants identified a range of fundamentally important scientific problems, which are closely tied to the goals of ODP's Long Range Plan, that can be addressed only by drilling deep into the Earth.

CONCORD Statement

The International Conference on Cooperative Ocean Riser Drilling (CONCORD) held in Tokyo, Japan, 22-24 July 1997 was attended by over 150 leading geoscientists, microbiologists, deep-sea drilling engineers and earth science program executives from 17 different countries. The Conference was organized by the International CONCORD Steering Committee, co-chaired by Dr. Hans Christian Larsen and Professor Ikuo Kushiro on behalf of the Japan Marine Science and Technology Center (JAMSTEC), Ocean Research Institute (ORI) of University of Tokyo and ODP/JOIDES and was co-sponsored by the Japanese Science and Technology Agency (STA) and the Ministry of Education, Science, Sports and Culture (MONBUSHO).

The main objective of the Conference is to document science that could be addressed by a riser-equipped drilling vessel of the type proposed by JAMSTEC. Five scientific and one technological working groups discussed the following subjects:

1) Climate, sea level changes, and deep biosphere;
2) Architecture of the ocean lithosphere;
3) Continental rifting and large igneous provinces (LIPs);
4) Subduction and earthquake processes;
5) Borehole and seafloor observatories; and
6) Drilling and tool technology development.

CONCORD participants representing a broad diversity of research interests and countries, after considering the present state of earth sciences and technology development, conclude that:
1.) Riser-type drilling is now indispensable for the continual development of humankind's understanding of the dynamic processes that shape our planet's surface, control the distribution of resources, and affect our environment and the biosphere through earthquakes, volcanism and climate change.

2.) A broad diversity of fundamental scientific questions can be addressed by deep ocean riser drilling, including (in no priority of order):

- Understanding Earthquake Cycle by Direct Long-term Observation of Active Processes in the Seismogenic Zone
- The Deep Biosphere: Exploring the Lost World
- A Mesozoic Reference Section: Anchoring the Global Array
- Tectonics and Monsoon Development
- Rhythms of the Greenhouse World
- Ultra Deep Drilling of the Lower Oceanic Crust and Moho
- Water-Rock Reactions and the Evolution of the Oceanic Crust
- Mantle Dynamics, Global Change, and Rupture of Continental Lithosphere
- Dynamics of Subduction Earthquakes and Faulting
- Initiation of Subduction, Island Arc Evolution, and Birth of Continents
- Multi-Packer, Multi-Level, Multi-Sensor Observatory Development

3.) Within these high-priority scientific themes identified by CONCORD, one particular experiment is unanimously selected and recommended by the Conference to be prepared for immediately, and the deep drilling required by this experiment should be allocated on the order of 1-2 years of initial drilling as soon as the vessel is available. The experiment chosen is a comprehensive study of an active seismogenic zone within a subduction zone system. The whole experiment, from planning through execution, is envisaged to be a concerted international effort providing an example of the future mode of international and global operation of the riser-equipped drilling vessel. This experiment has been chosen because of its outstanding scientific potential, readiness, societal relevance, and logistical suitability regarding water depths and potential sites close to the ship's home base, as required for the initial deployment and testing of the drillship.

4.) Many of the aforementioned science objectives can be achieved using the initially envisioned riser length of 2,500-3,000 m. However, several of science objectives require a riser system capable of operating in water depths in excess of 4000 meters. CONCORD strongly urges that JAMSTEC, with input from JOIDES and the drilling industry, evaluate applicable technologies for extending riser drilling capabilities into these greater water depths as soon as possible.

5.) CONCORD is fully aware of the high costs required to meet the proposed new ocean drilling with a riser system, and appreciates the initiative of Science and Technology Agency of Japan and JAMSTEC to construct a new drilling vessel with riser capabilities. It strongly recommends that relevant Japanese Authorities take the necessary steps to
begin to operate this new vessel before the envisioned end of ODP Phase III (1 October 2003).

6.) CONCORD fully endorses an internationally managed and funded two-ship program along the lines of the 1996 ODP Long Range Plan. International scientific planning for riser-type drilling should begin as soon as possible under the guidance of an appropriate advisory committee.

7.) CONCORD recognizes that further technological development in coring systems and borehole measurements is required for ODP Phase III. Considering that these are also essential elements in the proposed riser vessel operation, CONCORD strongly recommends that possible ways and means to cooperate with ODP in the development of these technologies should be pursued. In developing the final design and construction of the OD-21 drillship, and its drilling and riser systems, JAMSTEC should be prepared to work cooperatively with one or more of the world's leaders in commercial deepwater drilling technology.

CONCORD further emphasizes that:

Development of riser capability drilling within a future two-ship Integrated Ocean Drilling Program (IODP) must be seen as one of the most important elements in the ongoing preparations by the Earth science community to meet the scientific needs and challenges within the next century. Presently, our community is organizing its science into process-oriented and global experiments drawing on large facilities such as global seismic networks, deep continental drilling and ocean drilling. CONCORD envisages that the requested riser-drilling facility can only be realized through the combined resources of the world's leading nations in ocean sciences, and in collaboration with industry.
9.3.1 JOIDES RESPONSE TO IWG LETTER - TIMELINE FOR IODP SCIENTIFIC PLANNING

**Action Sought:**

EXCOM is asked to approve the timeline proposed by Nick Pisias, Acting Director of ODP, for IODP scientific conference planning culminating in a COSOD III, and involving the design of a second ship/platform.

EXCOM is asked to task SCICOM with organizing a “Conference to Define the Science for Non-Riser Drilling in the 21st Century: Toward an Integrated Ocean Drilling Program”.

**Background:**

Summary diagram showing post-2003 science planning.

On September 30, 1997, Dr. M. Purdy and Mr. T. Maruyama, Co-Chairs of the International Working Group (IWG) on an Integrated Ocean Drilling Program (IODP) for the 21st Century, wrote to Dr. R. Detrick, EXCOM Chair, to formally request assistance
from the JOIDES Advisory Structure for IODP planning. In the letter “the need for a major integrative activity (a COSOD III conference?) that would lay the overall plans for a decade or more of scientific ocean drilling beyond 2003” was identified.

In response to this request Nick Pisias, Acting Director of ODP, met with Mike Purdy and Don Heinrichs of NSF, and former ODP Director, Dave Falvey, to discuss future planning for the IODP. Dr. Pisias has proposed a timeline for IODP Planning which is intended to:

1. Define the scientific goals and objectives to be addressed by the second, non-riser vessel of the new IODP based on a consensus of the international marine geoscience community;
2. Based on the scientific issues, develop a conceptual ship/platform design that best addresses non-riser drilling in an IODP, and issue an RFP.
3. Schedule a COSOD III conference to integrate the science plans from CONCORD and the proposed “Conference to Define the Science for Non-Riser Drilling in the 21 st. Century” into a comprehensive plan for the new multi-platform IODP.

At this meeting, EXCOM is asked to task SCICOM with organizing the “Conference to Define the Science for Non-Riser Drilling in the 21 st. Century: Toward an Integrated Ocean Drilling Program (IODP)”, with the goal of defining the scientific objectives to be achieved with a second, non-riser ship/platform of an IODP. It is suggested that the SCICOM organizing committee structure the conference on the basis of white papers openly solicited from the international marine geoscience community. Such an open solicitation would provide an effective means to build an accurate consensus, and truly determine the scientific direction, of the scientific community. The first task of the SCICOM organizing committee would be to develop a suitable outline of white paper submissions, and then to solicit white papers from the international community. The preliminary report of the conference would serve as the basis for the formulation of an RFP for the design of a second ship/platform for IODP. Subsequently, EXCOM would approve plans for a broader COSOD III (Conference on Scientific Ocean Drilling) to take place in the Spring of 2001 in order to develop the IODP Long Range Plan for Scientific Ocean Drilling in the 21 st. Century.
SCICOM ESTABLISHES AN ORGANIZING COMMITTEE FOR A "CONFERENCE TO DEFINE SCIENCE FOR NON-RISER DRILLING IN THE 21ST CENTURY: TOWARD AN INTEGRATED OCEAN DRILLING PROGRAM" - SPRING (MARCH) 1998

ORGANIZING COMMITTEE MEETING TO OUTLINE THE FORMAT OF WHITE PAPERS - JUNE 1998

DEADLINE FOR WHITE PAPER SUBMISSION - OCTOBER 1998

CALL FOR WHITE PAPERS - JULY 1998

ORGANIZING COMMITTEE FINALIZES MEETING STRUCTURE AND ISSUES INVITATIONS TO PRESENTERS, BASED ON WHITE PAPERS - DECEMBER 1998

STATUS REPORT TO EXCOM - JANUARY 1999

CONFERENCE TO DEFINE SCIENCE FOR NON-RISER DRILLING IN THE 21ST CENTURY

PRELIMINARY REPORT - USED TO ISSUE AN RFP FOR THE SECOND SHIP JUNE 1999

EXCOM DISCUSSES & APPROVES TIMELINE FOR PLANNING FOR IODP - JANUARY 1998
COSOD III
SPRING (MARCH) 2001

LONG RANGE PLAN FOR SCIENTIFIC OCEAN DRILLING IN THE 21ST CENTURY

PHASE I OF SECOND SHIP RFP COMPLETED - MOVE TO PHASE 2 - JUNE 2000

SCICOM ESTABLISHES A COSOD III STEERING COMMITTEE - SPRING (MARCH) 2000

JANUARY 2000
EXCOM DISCUSSES & APPROVES PLANS FOR COSOD III
FINAL REPORT ON "CONFERENCE TO DEFINE SCIENCE FOR NON-RISER DRILLING IN THE 21ST CENTURY: TOWARD AN INTEGRATED OCEAN DRILLING PROGRAM"
Action Sought:

EXCOM is asked to approve the timeline proposed by Nick Pisias, Acting Director of ODP, for issuing an RFP for the design of a second ship/platform of an IODP.

Non-Riser Ship/Platform Design

A contract would be let to any technically capable and appropriately experienced commercial deep water drilling contractor to work with JOI, its sub-contractors for ODP, and a Program Planning Group of the JOIDES Advisory Structure, in three steps:

• Step 1 - Design Competition. An RFP will be issued and one or more contracts awarded for preparation of a detailed proposal for, and conceptual design of a new generation scientific, deep water drilling vessel, capable of addressing a wide range of scientific challenges, as laid out in JOIDES Planning documents specifically the results of the Non-Riser Science Conference, as well as in the 1996 ODP Long Range Plans. An alternative option might involve the substantial conversion of an existing drillship. Any successful offeror will incorporate new and innovative technologies for deepwater scientific ocean drilling, that address the scientific community's need for deeper, more complete and higher resolution sediment and rock cores from a wide range of geological and geographic settings. The conceptual design may, or may not involve a system for contained drilling mud circulation, but will not attempt to duplicate the very deep drilling capabilities of the OD-21 vessel. Any successful offeror will interact with a Program Planning Group during the contract period in order to develop a fuller appreciation of the scientific priorities that ocean drilling is trying to address. If the contracts costs too much, I will come back to you for supplemental funds.

If the conceptual design is deemed acceptable by the ODP Executive Committee and JOI, we would then expect to down-select a to a single contractor to continue during Steps 2 and/or 3.

• Step 2 will be the preparation of a number of detailed budget strategies that could lead to the realization of the new generation drill ship, or conversion, the conceptual design of which was developed in Step I.

• Step 3 will be the detailed design and construction/conversion of the new generation drill ship and its provision to the future Integrated Ocean Drilling Program (IODP). Any decision to proceed to Step III will depend on an assessment of the overall scientific capabilities of the new drill ship, and agreement amongst actual and
potential participants in IODP on a formula that would share the costs of its construction, fit-out and operation.

Steps 2 and 3 will be unpriced options on the basic contract.

It is expected that a successful commercial deep water drilling contractor will have a record of considerable experience, involving a high level of research, development, and technological innovation in the design, construction/conversion, and operation of very deep water petroleum exploration drilling platforms. A successful contractor will have experience in global operations, in a wide range of geological and geographical environments, and an outstanding record of safety. A successful contractor will also be able to demonstrate experience in, and/or in depth understanding of the problems and challenges facing scientific ocean drilling over at least the next two decades.

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**USSAC Motion**

October 15, 16, 1997
Santa Cruz, CA

USSAC recognizes the critical steps in both the US and internationally that are needed to establish the case for a new program of scientific ocean drilling beyond 2003, based on the two-ship model of the Long Range Plan. USSAC also recognizes the need for the scientific community to gain a better understanding of emerging commercial drilling and logging technologies.

The platform for these new technologies could either be the current JR (appropriately refitted) or a specially designed new build. In either case planning needs to begin now in order to provide scientific and operational continuity in 2003.

USSAC therefore supports the proposal by JOI-ODP to put out an RFP seeking a three step process for:

- drillship design concepts (Step 1)
- cost analyses (Step 2 - option 1)
- design and construction (Step 3 - option 2)

Step 1 will necessarily involve interaction between contractor and the scientific community.

USSAC also recognizes the need to develop a strong case in the US for a new program. USSAC therefore establishes a steering committee to:
• meet with NSF in the very near future to clarify processes and documentation needed to make the case.
• revise the COMPOST-II document
• publish and seek comment.
• plan for and conduct a US Conference on Scientific Ocean Drilling ("USSOD") in about mid/September, 1998 or later.
• Provide feedback to the drillship options contractor on scientific goals and targets beyond 2003.
9.3.3 SHORTER TERM SCIENTIFIC, TECHNICAL, & BUDGETARY ADVICE

**Action Sought:**

EXCOM is asked to approve

- the proposed structure outlined in the accompanying figure for providing short-term scientific and technical advice for IODP, subject to IWG financial support for this planning effort.
- the continuation of a JOIDES/IWG ad-hoc working group to examine IODP budgetary requirements.

EXCOM is asked to establish formal liaison relationships between EXCOM and IWG.