<table>
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<th>Panel or Committee</th>
<th>Dates</th>
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<tr>
<td>EXCOM</td>
<td>23-24 June 1998</td>
<td>Bonn, Germany</td>
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<td>ODP Council</td>
<td>25 June 1998</td>
<td>Bonn, Germany</td>
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<td>Gas Hydrates PPG</td>
<td>24-25 June 1998</td>
<td>College Station, Texas</td>
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<td>SCIMP</td>
<td>29 July -1 June 1998</td>
<td>LDEO, Palisades, New York</td>
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<td>Long Term Observatory PPG</td>
<td>6-7 July 1998</td>
<td>SOEST, Hawaii</td>
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<td>SSP</td>
<td>29-31 July 1998</td>
<td>LDEO, Palisades, New York</td>
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<td>SCICOM</td>
<td>17-19 August 1998</td>
<td>Durham, UK</td>
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<td>PANEL CHAIRS</td>
<td>20 August 1998</td>
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<td>OPCOM</td>
<td>21-22 August 1998</td>
<td>Durham, UK</td>
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<tr>
<td>SSEPS</td>
<td>2-4 November 1998</td>
<td>Gainesville, Florida</td>
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JOIDES EXECUTIVE COMMITTEE MEETING
AT
DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG)
BONN, GERMANY
JUNE 23-24, 1998

MEETING AGENDA

TUESDAY June 23 8:30 am

1. Welcome & Introduction
   1.1 Introduction of EXCOM members, liaisons, guests (Detrick)
   1.2 Meeting logistics (Ellins/Maronde)
   1.3 Approval of Agenda (Detrick)

2. Minutes and Matters Arising
   2.1 Approval of January 1998 EXCOM Minutes (Detrick)

3. NSF Report
   3.1 NSF Management Report (Heinrichs)
   3.2 Membership (Heinrichs)
      • China

4. 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 (Taira)
   4.6 PRC (The People’s Republic of China) (Wang)
   4.7 UK (Briden)
   4.8 USA (Heinrichs/Pisias)

5. FY 1999
   5.1 Presentation of the final FY 1999 ODP budget (Pisias)
   5.2 Impact of the final FY 1999 budget on Program delivery.
      • FY 1999 Science Plan (Humphris)
      • ODP/TAMU (Fox)
      • WLS/LDEO (Goldberg)
   5.3 Approval of the FY 1999 ODP Program Plan (Pisias)

Coffee 10:00-10:30 am
6. **Phase III Issues**
   6.1 Potential impact of the Phase III Budget projections on program delivery (Pisias).
   6.2 SCICOM response to EXCOM Motion 98-1-8: Procedure to provide a framework, based on a prioritization of themes of the Long Range Plan, for future budgetary decisions (Humphris)

7. **Revised EXCOM policy on JOIDES panel representation for Associate Members** (Detrick)

**Lunch**

12:00-1:30 pm

Discussion of EXCOM policy on JOIDES panel representation (continued, if necessary).

8. **SCICOM Report** (Humphris)
   8.1 EXCOM Approval of the Four Year Ship Track for the JOIDES Resolution through FY’01.

9. **Management and Operations Reports**
   9.1 JOI (Pisias)
      9.1.1 Leadership changes at JOI/ODP (new Director/new Assistant Director)
      9.1.2 Update for the strategy for international participation in ODP (EXCOM Motion 98-1-7)
      9.1.3 Update on progress towards mutually beneficial partnerships with industry.
      9.1.4 Gas Hydrates - ODP partnership possibilities.
      9.1.5 Public Affairs Subcommittee update (Orcutt).
         • 30th Anniversary Plans
         • Recent Port Calls

**Afternoon Coffee/Tea**

3:00-3:30 pm

9.2 **ODP/TAMU Management Report** (Fox)
   9.2.1 Update on leg 179 operations.
   9.2.2 Major technology development in ODP Phase III
      • Status of the active heave compensation System
      • Hammer drilling system/Leg 179
   9.2.3 Update on industry cooperative opportunities/joint ventures.
   9.2.4 Update on dry-dock
9.3  Wireline Logging Service Report (Goldberg)
   9.3.1  Technology Development and Innovations in ODP Phase III
   9.3.2  Update on industry cooperative opportunities/joint ventures
          •  FMS Atlas
   9.3.3  Dry-Dock Plans (DHML)

10.  Discussion of the Terms of Reference for PEC V (Pisias)

11.  Executive session (if necessary)

WEDNESDAY  June 24  8:30 am

12.  Planning for IODP
   12.1  EXCOM Letter to IWG and IWG reply (Detrick)
   12.2  IODP Scientific and Technical Planning (Humphris).
       12.2.1 1999 Conference on the Scientific Objectives of Ocean Drilling in
               the 21st Century (organizing committee and mandate) - response
               to EXCOM Consensus 98-1-12
       12.2.2  Seismogenic Zone Detailed Planning Group - response to EXCOM
               Consensus 98-1-13
       12.2.3  Technical and Operations Workshop (fall of 1998) to provide
               advice on the technical requirements and infra-structure of IODP -
               response to EXCOM Consensus 98-1-13

Coffee  10:00-10:30 am

   12.3  Status of Japanese planning for IODP (Maruyama)
   12.4  Joint ODP/JAMSTEC technology development project (EXCOM Motion
         98-1-11) (Pisias/Kinoshita)
   12.5  Financial planning for IODP (Purdy)

13.  Future Meetings and Other Business
   13.2  June 1999 (Vancouver, Canada ??)
   13.3  Other Business

Meeting Adjourns  ~  Noon
MEETING OF THE
JOIDES EXECUTIVE COMMITTEE
AT
DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG)
BONN, GERMANY

JUNE 23 -24, 1998

AGENDA BOOK

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 an active Memoranda 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.

*Ratified by EXCOM: 12 February, 1997; Adopted by JOI Board of Governors: 13 February, 1997*
JOIDES Executive Committee
Meeting Participants
Deutsche Forschungsgemeinschaft (DFG)
BONN, GERMANY

JUNE 23 -24, 1998

Executive Committee - EXCOM

<table>
<thead>
<tr>
<th>Name</th>
<th>Institution</th>
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<tbody>
<tr>
<td>Helmut Beiersdorf</td>
<td>Bundesanstalt für Geowissenschaften und Rohstoffe, Hannover, Germany</td>
</tr>
<tr>
<td>James Briden</td>
<td>Environmental Change Unit, Oxford University, United Kingdom</td>
</tr>
<tr>
<td>Chris Harrison</td>
<td>Rosenstiel School of Marine and Atmospheric Sciences, University of Miami</td>
</tr>
<tr>
<td>Brent Dalyraple</td>
<td>College of Oceanic &amp; Atmospheric Sciences, Oregon State University</td>
</tr>
<tr>
<td>Robert Detrick (Chair)</td>
<td>Woods Hole Oceanographic Institution</td>
</tr>
<tr>
<td>Olav Eldholm</td>
<td>University of Oslo, European Science Foundation (Consortium for Ocean Drilling)</td>
</tr>
<tr>
<td>David Feary</td>
<td>Australian Geological Survey Organisation, Australia - Canada-Chinese Taipei - Korea Consortium</td>
</tr>
<tr>
<td>Margaret Leinen</td>
<td>Graduate School of Oceanography, University of Rhode Island</td>
</tr>
<tr>
<td>Catherine Mével</td>
<td>Université Pierre et Marie Curie, Paris</td>
</tr>
<tr>
<td>John Mutter</td>
<td>Lamont-Doherty Earth Observatory, Columbia University</td>
</tr>
<tr>
<td>Arthur Newell</td>
<td>School of Oceanography, University of Washington</td>
</tr>
<tr>
<td>John Orcutt</td>
<td>Scripps Institution of Oceanography, University of California</td>
</tr>
<tr>
<td>David Prior</td>
<td>College of Geosciences &amp; Maritime Studies, Texas A&amp;M University</td>
</tr>
<tr>
<td>Barry Raleigh</td>
<td>School of Ocean and Earth Science and Technology, University of Hawaii</td>
</tr>
<tr>
<td>Paul Stoffa</td>
<td>Institute for Geophysics, University of Texas at Austin</td>
</tr>
<tr>
<td>Asahiko Taira</td>
<td>Ocean Research Institute, University of Tokyo, Japan</td>
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EXCOM Liaisons

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
</tr>
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<tbody>
<tr>
<td>Kate Moran</td>
<td>Joint Oceanographic Institutions, Inc.</td>
</tr>
<tr>
<td>Nick Pisias</td>
<td>Joint Oceanographic Institutions, Inc.</td>
</tr>
<tr>
<td>Jeff Fox</td>
<td>Science Operator (ODP-TAMU)</td>
</tr>
<tr>
<td>David Goldberg</td>
<td>Wireline Logging Services (ODP-LDEO)</td>
</tr>
<tr>
<td>Donald Heinrichs</td>
<td>National Science Foundation (United States)</td>
</tr>
<tr>
<td>Susan Humphris</td>
<td>SCICOM Chair, JOIDES Office, WHOI</td>
</tr>
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</table>
## Guests and Observers

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Jamie Allan</td>
<td>National Science Foundation (United States)</td>
</tr>
<tr>
<td>Enrico Banda</td>
<td>European Science Foundation (Consortium for Ocean Drilling)</td>
</tr>
<tr>
<td>Warner Brückmann</td>
<td>GEOMAR, Keil, Germany</td>
</tr>
<tr>
<td>Paul Dauphin</td>
<td>National Science Foundation (United States)</td>
</tr>
<tr>
<td>Peter Eisenberger</td>
<td>Columbia University, New York</td>
</tr>
<tr>
<td>John Farrell</td>
<td>Joint Oceanographic Institutions, Inc.</td>
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<tr>
<td>Masaya Fukushima</td>
<td>Ocean and Earth Division, STA (Japan)</td>
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<tr>
<td>Bill Hay</td>
<td>GEOMAR, Keil, Germany</td>
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<tr>
<td>Shizuo Hoshiba</td>
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<tr>
<td>Charles Kennel</td>
<td>Scripps Institution of Oceanography, University of California</td>
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<tr>
<td>Hajimu Kinoshita</td>
<td>JAMSTEC (Japan)</td>
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<td>Kazuhiro Kitazawa</td>
<td>JAMSTEC (Japan)</td>
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<tr>
<td>Bruce Malfait</td>
<td>US National Science Foundation</td>
</tr>
<tr>
<td>Dietrich Maronde</td>
<td>Deutsche Forschungsgemeinschaft, Bonn, Germany</td>
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<td>Tsuyoshi Maruyama</td>
<td>Ocean and Earth Division, STA (Japan)</td>
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<td>Peadar McArdle</td>
<td>Geologic Survey of Ireland, Ireland</td>
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<td>Judy Mckenzie</td>
<td>ETH, Zurich/European Science Foundation (Consortium for Ocean Drilling)</td>
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<td>Chris Pigram</td>
<td>Australian Geological Survey Organisation, Sydney, Australia</td>
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<td>Michael Purdy</td>
<td>National Science Foundation (United States)</td>
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<td>Toshio Shimoda</td>
<td>JAMSTEC (Japan)</td>
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<tr>
<td>Pierre Vidal</td>
<td>CNRS, Paris, France</td>
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<tr>
<td>Wang Zhixiong</td>
<td>Marine High Technology Bureau, Beijing, China</td>
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## JOIDES Office

<table>
<thead>
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<th>Name</th>
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<tbody>
<tr>
<td>Kathy Ellins</td>
<td>Science Coordinator</td>
</tr>
<tr>
<td>Christina Chondrogianni</td>
<td>International Liaison</td>
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## ODP Operations Schedule: April 1998 - December 1999

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<tr>
<th>Leg</th>
<th>Area</th>
<th>Ports</th>
<th>Cruise Dates</th>
<th>Co-Chief Scientists</th>
<th>Staff Scientist</th>
<th>Staffing</th>
<th>Territorial Permission</th>
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<tr>
<td>179</td>
<td>NERO/ Hammer Drilling</td>
<td>Cape Town-Darwin</td>
<td>April-May 1998</td>
<td>Dr. John F. Casey</td>
<td>Dr. Jay Miller</td>
<td>Completed</td>
<td>Papua New Guinea</td>
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<td>180</td>
<td>Woodlark Basin</td>
<td>Darwin-Sydney</td>
<td>June-July 1998</td>
<td>Dr. Philippe Huchon Dr. Brian Taylor</td>
<td>Dr. Adam Klaus</td>
<td>Completed</td>
<td>New Zealand</td>
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<td>181</td>
<td>SW Pacific Gateways</td>
<td>Sydney-Wellington</td>
<td>August-September 1998</td>
<td>Dr. I.N. McCave Dr. Robert M. Carter</td>
<td>Dr. Carl Richter</td>
<td>Near Completion</td>
<td>New Zealand</td>
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<td>182</td>
<td>Great Australian Bight</td>
<td>Wellington-Fremantle</td>
<td>October-November 1998</td>
<td>Dr. Albert C. Hine Dr. David A. Feary</td>
<td>Dr. Mitch Malone</td>
<td>Near Completion</td>
<td>Australia</td>
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<tr>
<td>183</td>
<td>Kerguelen</td>
<td>Fremantle-Fremantle</td>
<td>December 1998-February 1999</td>
<td>Dr. Millard F. Coffin Dr. Frederick A. Frey</td>
<td>Dr. Paul Wallace</td>
<td>Underway</td>
<td>Australia, France</td>
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<td>184</td>
<td>East Asia Monsoon</td>
<td>Fremantle-Hong Kong</td>
<td>February-April 1999</td>
<td>Dr. Warren Prell Dr. Pinxian Wang</td>
<td>Dr. Peter Blum</td>
<td>Underway</td>
<td>Multiple</td>
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<td>185</td>
<td>Izu-Mariana</td>
<td>Hong Kong-Tokyo</td>
<td>April-June 1999</td>
<td>Dr. John Ludden Dr. Terry Plank</td>
<td>Dr. Jay Miller</td>
<td>Underway</td>
<td>Japan</td>
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<td>186</td>
<td>W. Pacific Seismic Net-Japan Trench</td>
<td>Tokyo-TBN</td>
<td>June-August 1999</td>
<td>Dr. Kiyoshi Suyehiro TBN</td>
<td>Dr. Gary Acton</td>
<td>To be determined</td>
<td>Japan</td>
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<td>187</td>
<td>Australia-Antarctic Discordance</td>
<td>TBN-Fremantle</td>
<td>October-December 1999</td>
<td>Dr. David Christie TBN</td>
<td>TBN</td>
<td>To be determined</td>
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</table>

- **Leg**: Identification number for each leg of the operation.
- **Area**: Geographic area or project description.
- **Ports**: Starting and ending ports for the cruise.
- **Cruise Dates**: Dates during which the cruise took place.
- **Co-Chief Scientists**: Lead scientists for the cruise.
- **Staff Scientist**: Additional scientist involved.
- **Staffing**: Status of the operation (completed, near completion, underway, to be determined).
- **Territorial Permission**: Country where permission was granted (if applicable).
JOIDES EXECUTIVE COMMITTEE MEETING
AT
DEUTSCHE FORSCHUNGSGEMEINSCHAFT (DFG)
BONN, GERMANY
JUNE 23 -24, 1998
MEETING AGENDA NOTES

TUESDAY June 23 8:30 am

1. Welcome & Introduction
   1.1 Introduction of EXCOM members, liaisons, guests (Detrick)
   1.2 Meeting logistics (Ellins/Maronde)
   1.3 Approval of Agenda (Detrick)

2. Minutes and Matters Arising
   2.1 Approval of January 1998 EXCOM Minutes (Detrick)

EXCOM is asked to approve the January 1998 EXCOM Meeting Minutes.

3. NSF Report
   3.1 NSF Management Report (Heinrichs)

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

   3.2 Membership (Heinrichs)
      • China

EXCOM welcomes China to ODP. China became as Associate Member of ODP in April 1998.

4. 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 (Taira)
   4.6 PRC (The People's Republic of China) (Wang)
   4.7 UK (Briden)
   4.8 USA (Heinrichs/Pisias)

EXCOM is asked to review and comment on the Country Reports.
5. **FY 1999**

5.1 Presentation of the final FY 1999 ODP budget (Pisias) TAB 5

5.2 Impact of the final FY 1999 budget on Program delivery.
- FY 1999 Science Plan (Humphris)
- ODP/TAMU (Fox)
- WLS/LDEO (Goldberg)

5.3 Approval of the FY 1999 ODP Program Plan (Pisias) TAB 7

---

EXCOM is asked to approve the FY 1999 Program Plan.

The FY 1999 Program Plan will be distributed by JOI to EXCOM Members under separate cover.

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**Coffee** 10:00-10:30 am

---

6. **Phase III Issues**

6.1 Potential impact of the Phase III Budget projections on program delivery (Pisias).

6.2 SCICOM response to EXCOM Motion 98-1-8: Procedure to provide a framework, based on a prioritization of themes of the Long Range Plan, for future budgetary decisions (Humphris)

---

EXCOM is asked to review and comment on SCICOM'S response to EXCOM Motion 98-1-8.

---

**EXCOM Motion 98-1-8**

Presently determined budgetary constraints through 2003 will negatively impact the delivery of the Long Range Plan. EXCOM asks SCICOM to prioritize future science objectives to maximize the objectives of the Long Range Plan, clearly indicating those which cannot be achieved under existing budget projections. SCICOM should also identify and prioritize changes in program activities, services, equipment needs and technological development. SCICOM is asked to forward its report to EXCOM by September 1998.

---

7. **Revised EXCOM policy on JOIDES panel representation for Associate Members** (Detrick)

---

EXCOM is asked to review and endorse the revised policy on Associate Membership levels with corresponding JOIDES panel representation, and recommend its adoption to ODP Council.

---

**Lunch** 12:00-1:30 pm
8. SCICOM Report (Humphris)

8.1 EXCOM Approval of the Four Year Ship Track for the JOIDES Resolution through FY'01.

EXCOM is asked to approve the Four Year Ship Track for the JOIDES Resolution.

---

SCICOM Motion 98-1-11
In order to fulfill the objectives of the LRP and to respond to existing proposals, SCICOM establishes that the general ship track for the JOIDES Resolution will remain in the Indian and Pacific Oceans through FY'01. SCICOM anticipates that the ship will return to the Atlantic Ocean prior to the end of Phase III.

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9. Management and Operations Reports

9.1 JOI (Pisias)

9.1.1 Leadership changes at JOI/ODP (new Director/new Assistant Director)

EXCOM welcomes Kate Moran as the new Director of the Ocean Drilling Program, and Frank Rack, as the new Assistant Director.

9.1.2 Update for the strategy for international participation in ODP (EXCOM Motion 98-1-7)

EXCOM Motion 98-1-7
In light of a desire to increase the overall funding of ODP by addition of new members, EXCOM requests that JOI update its strategy for international participation. In particular attention should be paid to (1) identifying the benefits of Associate Membership so that there are adequate incentives for increasing contributions toward Full Membership, (2) suggesting the role that the ODP Council should play in assisting JOI, (3) identifying the elements of a multi-faceted recruiting strategy including appeals to industrial, political, and mission agency constituencies, as well as academic communities and international organizations (like the OECD).

By consensus (EXCOM Consensus 98-1-6), EXCOM established an advisory committee composed of Feary, Stoffa, and Eldholm to work with the acting and future ODP Director in recruiting new members to the Program.

9.1.3 Update on progress towards mutually beneficial partnerships with industry.

9.1.4 Gas Hydrates - ODP partnership possibilities.
EXCOM is asked to note and comment on the opportunities for ODP to collaborate in gas hydrate research that have been identified by JOI, and to advise JOI on how to proceed.

9.1.5 Public Affairs Subcommittee update (Orcutt). TAB 14
- 30th Anniversary Plans
- Recent Port Calls

Afternoon Coffee/Tea 3:00-3:30 pm

9.2 ODP/TAMU Management Report (Fox) TAB 15
9.2.1 Update on leg 179 operations.
9.2.2 Major technology development in ODP Phase III
   - Status of the active heave compensation System
   - Hammer drilling system/Leg 179
9.2.3 Update on industry cooperative opportunities/joint ventures.
9.2.4 Update on dry-dock

9.3 Wireline Logging Service Report (Goldberg) TAB 16
9.3.1 Technology Development and Innovations in ODP Phase III
9.3.2 Update on industry cooperative opportunities/joint ventures
   - FMS Atlas
9.3.3 Dry-Dock Plans (DHML)

10. Discussion of the Terms of Reference for PEC V (Pisias) TAB 17
EXCOM is asked to review the charge to PEC V and make recommendations to JOI BoG.

11. Executive session (if necessary)

WEDNESDAY June 24 8:30 am

12. Planning for IODP
12.1. EXCOM Letter to IWG and IWG reply (Detrick) TAB 18
12.2 IODP Scientific and Technical Planning (Humphris).
   12.2.1 1999 Conference on the Scientific Objectives of Ocean Drilling in the 21st Century (organizing committee and mandate) - response to EXCOM Consensus 98-1-12 TAB 19
EXCOM Consensus 98-1-12

By consensus, EXCOM (1) approves the timeline proposed by Nick Pisias, Acting Director of ODP, for an IODP scientific conference in spring 1999 and tasks SCICOM with organizing this conference; and (2) approves the timetable for the design and issuance of an RFP for a second ship/platform for IODP.

12.2.2 Seismogenic Zone Detailed Planning Group - response to EXCOM Consensus 98-1-13

12.2.3 Technical and Operations Workshop (fall of 1998) to provide advice on the technical requirements and infrastructure of IODP - response to EXCOM Consensus 98-1-13

EXCOM Consensus 98-1-13

By consensus, EXCOM (1) approves the proposed general structure presented by the SCICOM Chair for providing short-term scientific and technical advice for IODP planning; (2) recommends the utilization of JOI and appropriate members of the JOIDES advisory structure to assist IWG in determining IODP budgetary and management requirements; and (3) agrees to the establishment of formal liaison relationships between EXCOM and IWG.

Coffee 10:00-10:30 am

12.3 Status of Japanese planning for IODP (Maruyama)
12.4 Joint ODP/JAMSTEC technology development project (EXCOM Motion 98-1-11) (Pisias/Kinoshita)
12.5 Financial planning for IODP (Purdy)

13. Future Meetings and Other Business
13.2 June 1999 (Vancouver, Canada ??)
13.3 Other Business

Meeting Adjourns ~ Noon
2.0 MINUTES AND MATTERS ARISING
2.1 APPROVAL OF JANUARY 1998 EXCOM MINUTES

Action Sought:

EXCOM is asked to approve the January 1998 EXCOM Meeting Minutes.

MEETING OF THE
JOIDES EXECUTIVE COMMITTEE
AT
BIOSPHERE 2
ARIZONA, U.S.A

JANUARY 19 -20, 1998

DRAFT MINUTES

Meeting Participants

Executive Committee - EXCOM

<table>
<thead>
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<th>Name</th>
<th>Institution</th>
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<tbody>
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<td>Brent Dalrymple</td>
<td>College of Oceanic &amp; Atmospheric Sciences, Oregon State University</td>
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<td>Robert Detrick</td>
<td>Woods Hole Oceanographic Institute</td>
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<td>David Prior</td>
<td>College of Geosciences &amp; Maritime Studies, Texas A&amp;M University</td>
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<tr>
<td>Olav Eldholm</td>
<td>University of Oslo, European Science Foundation (Consortium for Ocean Drilling)</td>
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<td>David Feary</td>
<td>Australian Geological Survey Organisation, Australia - Canada-Chinese Taipei - Korea Consortium</td>
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<td>Margaret Leinen</td>
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<td>Catherine Mével</td>
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<td>John Mutter</td>
<td>Lamont-Doherty Earth Observatory, Columbia University</td>
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<td>Ocean Research Institute, University of Tokyo, Japan</td>
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<tr>
<td>Brian Taylor</td>
<td>School of Ocean and Earth Science and Technology, University of Hawaii</td>
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1 Alternate for John Orcutt; 2 Alternate for Otis Brown; 3 Alternate for Keisuke Taira

**EXCOM Liaisons**

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<th>Name</th>
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<td>Nick Pisias</td>
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<td>David Goldberg</td>
<td>Wireline Logging Services (ODP-LDEO)</td>
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<td>Donald Heinrichs</td>
<td>National Science Foundation (United States)</td>
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<tr>
<td>Susan Humphris</td>
<td>SCICOM Chair, JOIDES Office, WHOI</td>
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<tr>
<td>James Watkins</td>
<td>Joint Oceanographic Institutions, Inc.</td>
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**Guests and Observers**

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<tr>
<th>Name</th>
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<td>John Farrell</td>
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<td>Tsuyoshi Maruyama</td>
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<td>Michael Purdy</td>
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<td>Shinichi Takagawa</td>
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<td>Aaron Woods</td>
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**JOIDES Office**

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<tr>
<th>Name</th>
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<tr>
<td>Kathy Ellins</td>
<td>Science Coordinator</td>
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<tr>
<td>Christina Chrondrogiani</td>
<td>International Liaison</td>
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2 MINUTES OF THE JOIDES EXECUTIVE COMMITTEE (EXCOM) MEETING, JANUARY, 1998
MONDAY January 19 8:30 AM

1. Welcome & Introductions
1.1 Introduction of EXCOM Members, Liaisons, Guests

Detrick introduced the ODP Acting Director, Nick Pisias, and expressed the gratitude of the ODP community for his willingness to serve as Acting Director while the search for a permanent replacement goes forward. David Prior, the new EXCGM representative from TAMU, Kensaku Tamaki, attending as the EXCOM representative from Japan, Wolf Berger, representing Scripps, and Christina Chronogiannni, the new International Liaison in the JOIDES Office, were also introduced. John Farrell is the new Associate ODP Program Director at JOI.

1.2 Meeting Logistics

The meeting logistics were summarized by Ellins and Mutter. Mutter expanded on the goal of Columbia University to create a research and educational facility at Biosphere 2. Biosphere 2, which includes 250 acres of land and access to an additional 100 acres, is still owned by Ed Bass, but has been managed by Columbia University for the past two years. The scheduled field trip will provide a look at this facility.

1.3 Approval of Agenda

EXCOM Motion 98-1-1
EXCOM approves the Agenda for the January, 1998 EXCOM Meeting with the addition of the following two items: (1) PEC V under the JOI Management Report, item 8.1.7; (2) an update from Hans Christian Larsen on an alternative platform of opportunity, item 8.4.

Proposed by Stoffa; seconded by Leinen. Unanimous acceptance.

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

EXCOM Motion 98-1-2
EXCOM approves the June 1997 EXCOM Meeting Minutes as a true and accurate record of the proceedings.

Proposed by Beiersdorf; seconded by Harrison. Unanimous acceptance.
MINUTES OF THE JOIDES EXECUTIVE COMMITTEE (EXCOM) MEETING,
JANUARY, 1998

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

Heinrichs welcomed Nick Pisias as the Acting ODP Program Director on behalf of NSF.

The FY 1998 ODP Program Plan, which includes $3 million for JR refit, was evaluated by the National Science Board. The presentation (by Bruce Malfait) was very well received and the Program received formal financial approval for the period 1999 - 2002 (basically through 2003). The reason for approval only through 2002 is the recognition that 2003 will be different, marking the transition into IODP, or winding down the Program.

New items not in the written report include:
- The appointment of Geosciences Director, Bob Corell, has been extended to December 31, 1999. There will be a recruitment process for a replacement for Corell.
- Commitments in writing for membership in the ODP (quasi-ODP Council matter) have been received from the UK, Germany, the PAC RIM Consortium, Japan, and ESF. PAC RIM is still working on a full membership. Although ESF has renewed, membership within the consortium is still incomplete.
- NSF has received a message from Francois Madelain, the ODP Council representative, indicating that France will reduce its contribution to the Program to two thirds of a full membership. At present, France is approaching countries outside of France (i.e. Brazil and South Africa) in an attempt to form a consortium. Discussions between NSF and France are imperative. Heinrichs, Purdy and Mével will meet in discussions at the EXCOM meeting.
- Candidate membership for China is in the process of being finalized. Alice Hogan, Heinrichs, and Malfait (all of NSF) visited China in December. The team returned with a draft MOU for China to participate in the ODP at a 1/6 level for three years. Negotiations with China were arranged primarily by Professor Wang. According to the MOU, the tentative starting date for China as an associate member was February 2, 1998. This date has slipped but NSF anticipates that China will formally join in the next three months.

The target NSF budget for FY 1999 is $48.5 million, which is 2.3% above the FY 98 level.

4. Country Reports
4.1 PAC RIM Consortium.

The written report, which was not received by the JOIDES Office, will be sent to Ellins to be circulated to EXCOM members and liaisons. Feary reported that Korea has received approval for a membership increase from a 1/12 to 1/6 level. Current economic and financial problems will not permit this until matters are sorted out. KIGAM will continue to host the secretariat. The Australian secretariat will move from Townsville to Sydney under the direction of Jock Keene. Canada has indicated their support for the new JOIDES advisory panel structure.
Feary reported that the ground swell of support that previously existed in Australia for ODP has faded, rendering Australia's ODP membership tenuous. Thus, upcoming port calls will be an important component of retaining Australia's participation. Feary also outlined some concerns that Australian scientists have regarding the new proposal process, including external evaluation, and the JOIDES panel structure. Humphris indicated her desire to allay the concerns noted, and agreed to meet with Feary to discuss these matters further. Feary reported that PAC RIM is having difficulty incorporating new members into the consortium. At issue is the participation of scientists from new member countries into Program activities and panels. This integration will be a continuing challenge to the PAC RIM consortium and the JOIDES Office.

4.2 ECOD.
Regarding Phase III, Eldholm reported that he knows no more than he did at the Brest EXCOM meeting. There are problems with Turkey, which ECOD can live with since they contribute only 2%, and Portugal is now in the consortium. Problems with Italy continue, however, and there is no information on when a budget in Italy will be approved. The Nordic countries are considering a merger with other European countries into a single consortium - a notion that is supported by EMAPS.

ECOD, through the IWG, has expressed interest in participating in an IODP. A decision on participation will not be considered, however, until there is a framework IODP document in place.

4.3 FRANCE
Mével expanded on the situation in France. It is potentially worse than conveyed by Heinrichs in the NSF report because the French Ministry has said that 2/3 of a full membership is the MAXIMUM level at which France can continue to participate in ODP - it could be less! France is seeking partners to form a consortium and contact has already been made with South Africa; France is also considering approaching Brazil. Although it would be more natural to have a consortium with other European countries, France recognizes that this will not happen at present. There will be a French ODP scientific meeting at the end of January. Participants from the oil industry, which has expressed a lot of recent interest in ODP, are expected to attend. A French site survey cruise to the Kerguelen Plateau will occur in February.

EXCOM Motion 98-1-3
Recognizing France's leadership in the international geoscience community and its many contributions to scientific ocean drilling, EXCOM deeply regrets the intent of France to reduce its contribution to (at most) $2 M/yr. and notes that, according to current EXCOM and ODP Council Policy, this will result in a reduction in French representation on JOIDES panels and participation on ODP legs, and could, under present policy, result in exclusion from the Program. EXCOM urges France to work within its national community to retain its full membership in ODP, rather than forming a consortium by including countries already directly approached by JOI as potential, additional ODP members.
Proposed by Stofra; seconded by Briden. 14 in favor; two abstentions - Feary and Mével

4.4 GERMANY
Beiersdorf reported that Germany's continuation as a full member in ODP is clear and ODP Germany is in good shape. Germany looks forward to receiving the contract for the next JOIDES Office from NSF. The Chair of SCICOM and head of the German JOIDES Office will be Bill Hay, who is an American. Heinrichs noted that NSF has approved the contract.

4.5 JAPAN.
Tamaki reported that CONCORD was very successful and that 150 scientists participated. In Japan, the evaluation committee approved participation in Phase III and a final decision from the government congress regarding the budget is expected. Currently, Asahiko Taira is Co-Chief on a Japanese site survey cruise to the Ontong Java Plateau which, if successful, will increase the chances for this LIP being drilled in 2000. JAMSTEC, Monbusho and STA are now in full agreement to support IODP. In October 1998, ORI will enter into a logging subcontractual agreement with LDEO.

4.6 UK
Briden reported that there is enthusiasm in Britain for ODP, following the thorough review that the Program received in Britain. This restores the long tradition of support for the ODP in the UK. John Krebs (NERC - ODP Council) is now in favor of ODP and the UK is looking in the more general direction of European collaboration in the long run. The positive position in the UK is 180° out of phase with France.

The UK has established a new single committee, which will be chaired by Steve Sparks, to oversee the UK's national obligations to ODP as a member of JOIDES. The European UK Science Forum, which is being organized by Alistair Robertson, will take place September 21 - 22, 1998, in Edinburgh with a field trip to the Ballantrae ophiolite on Saturday, September 19. Members from beyond Europe will be welcome.

United States
NSF approved the ODP Program Plan including $3 million for the refit of the JR. There is not yet a division budget at NSF. This is a US government issue. NSF is still waiting for the FY 1998 budget, although FY 1998 commenced last October. Thus, there are some uncertainties that will exist until the budget is finalized.

NSF ODP Grants activity will support 7 field programs, many of which are in collaboration with other countries. The ODP Greatest Hits Volume (funded by USSAC) was successful and a second print run of 10,000 copies has been arranged. Farrell noted that there are over 100 of these hits on the JOI web site. Mével suggested that it would have been better to have approached this as an international effort.
5.0 FY 1999

5.1 Science Plan for Legs 184 to 188

Detrick provided background on the procedures for the approval of the annual ODP Program Plan. Approval for the FY Science Plan and the preliminary budget is sought at the January/February EXCOM Meeting. This allows JOI to work with the subcontractors to further develop and refine the budget before approval is sought for the final budget and ODP Program Plan at the June EXCOM Meeting.

Humphris explained the development of the FY 1999 Science Plan and the scheduling of legs into FY 2000. She presented the legs in the context of the primary themes and objectives of the ODP Long Range Plan.

Legs 182, 184, and 188 fall within the Earth’s Environment theme. Leg 182 will investigate the sea level record of a cool water carbonate shelf in the Great Australian Bight. ODP has already examined sea level in warm water carbonates (Bahamas Transect). Leg 184, which complements Leg 117, tests the relationship between evolution of the Asian Monsoon and the hypothesized stages in the uplift of the Himalayas based on Chinese land records. Leg 188 is aimed at studying the history of the Ice Sheet of Antarctica by drilling in Prydz Bay, a key area which drains 22% of the East Antarctic Sheet. There are two contingencies associated with this leg, which is only penciled into the schedule: (1) SCICOM wants to evaluate the results of Leg 178 to ensure that the strategy of using progradational wedges and sediment drifts to address the scientific problem that have been posed will work, and (2) the cost of the ice boat for ODP needs to minimized - proponents of Leg 188 are working with ANTOSTRAT to address this budgetary issue.

Legs 183, 185, 186, and 187 fall within the Earth’s Interior theme. Exploring the transfer of heat and materials from Earth’s interior to exterior will be addressed by Leg 183. A suite of holes of approximately 200 m basement penetration will be drilled along a transect to investigate the origin, growth, compositional variation, and subsidence history of the Large Igneous Province (LIP) formed by the Kerguelen Plateau and Broken Ridge in the southeastern Indian Ocean. An offset drilling program carried out in the vicinity of major fault scarps will provide access deeper, older rocks.

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).

Leg 187 will investigate relationships among ocean crustal composition, mantle composition, spreading and magma supply rates at the Australian Antarctic Discordance (AAD), a major geochemical anomaly indicative of unusual mantle dynamics and profound differences in magma supply. A series of holes two hundred
meters into basement will be drilled to sample "hot" mantle to define the boundary between Indian and Pacific mantle provinces, permitting current models of mantle convection to be tested.

Leg 186 will drill two boreholes at Sites JT-1A and JT-2A located in the accretionary wedge near the Japan trench, to serve as long-term geophysical observatories. The borehole observatories will be instrumented with broadband seismographs and strainmeters. The data acquired will provide information about subduction zone earthquakes, particularly, tsunamigenic and slow earthquakes, as well as the seismicity of the Japan forearc and wave propagation effects in the subducting slab.

**Discussion**

Beiersdorf asked how the increased interaction between ODP and other **global geoscience initiatives** called for in the 1996 LRP is reflected in this Science Plan. Humphris responded that while these legs were not developed in conjunction with other global geoscience initiatives, the objectives are relevant to many global initiatives. For example, Leg 185 is relevant to the US Margins Program, and the SEIZE initiative; Legs 184 and 188 are relevant to IMAGES; Leg 188 to ANTOSTRAT, and Leg 183 to LIPS. Leg 187 (AAD) is in the Indian Ocean, which has been targeted by InterRidge. In response to whether ODP needed to improve anything further regarding interaction between ODP and other initiatives, Humphris expanded on the relationship between PPGs and global geoscience initiatives, and the liaison relationships between SCICOM and larger geoscience programs, such as NAD and the ICDP.

Eldholm asked how disputed territories in the South China Sea would affect the science of **Leg 184**. If clearance cannot be obtained for the southern sites from the claimant nations, they will not be drilled. SCICOM believes that drilling the northern sites alone is high priority science, and that the major objectives of the Leg will not be compromised by the elimination of the southern sites. The site survey issues are not completely resolved, but progress has been made. PPSP pre-reviewed the leg in December 1997 because of a concern that the northern sites are in an oil producing area. A lot of seismic data were presented and PPSP has requested that some of the data be better processed. A group in China is currently reprocessing some of the lines, and these will be reviewed by PPSP in May. Humphris' sense is that some of the sites might be moved, but that the leg is possible.

Admiral Watkins said that, from the perspective of one involved in public policy, Humphris' presentation underscores the importance of ODP to the entire scientific community dealing with global climate change. With the "Year of the Ocean" coming up, the **unique contributions of ODP** regarding themes in the LRP (natural climate variability, climate change, causes and effects of sea level change) to the knowledge base is not addressed at conferences like the Kyoto Conference on Global Climate Change. He argued that ODP provides very specific, unique pieces of information of great value, but these contributions have not been used advantageously in the public arena to garner more support for the Ocean Drilling Program. The Admiral suggested that Leg 184 can
serve to underpin a very exciting public affairs event that could bring great support and visibility to this Program, but the ground work for this needs to be laid now.

Dalrymple noted that a real problem with the US climate change program is the refusal to recognize information pertaining to time periods older than 2000 years as being significant. The focus is on recent climate change and the present; geologic history is of less interest. He said that he did not disagree with the Admiral, but that what was envisioned presented a challenge, and could be a tough nut to crack. Leinen noted that progress has been made and called attention to the Pathways document, the latest document of the US Global Change Research Program, which is one third on paleoclimate. This community has done a lot over the past five years to turn things around. Its focus has been on high resolution records and essentially resolving the question: Are the changes in temperature that we see part of centennial to millennial warming that is natural, or are they anthropogenically induced? A lot of headway has occurred on this front, but not regarding the problem of thresholds and step function changes - the kinds of climate change problems that ODP is uniquely capable of looking at. Many people involved in writing sections of the document are scientists who have served on ODP Thematic Panels.

Briden asked about instrumentation of the OSN-1 hole. Detrick explained that the reason that Orcutt (EXCOM member from Scripps) was not attending the meeting was because the downhole instrumentation and the broadband seismometer were currently being deployed in OSN-1. In addition, one instrument was being buried in the sediments at the site and another broadband seismometer located on the seafloor. The instruments will be recovered in June; and results are expected later this year.

Mével asked for a review of how the JOIDES structure functioned in the determination of the Science Plan. SCICOM was involved in the selection of programs sent forward to OPCOM for scheduling. OPCOM scheduled 6 legs from the 11 proposals selected by SCICOM. Proposals not scheduled will be reconsidered at the August SCICOM meeting. These proposals will not be subjected to external review again. Proponents will be given the opportunity to submit an update letter. Feary said that this seemed to be essentially the same as the old structure with six out of twelve proposals going forward and the other six being returned to the pool. Humphris said that, in the past, the six that did not get scheduled went all the way back to the Thematic Panels to be re-ranked. Now they stay up at the SCICOM level. It actually takes a step out as there are no longer two rankings of every proposal.

Briden noted that this was the second year that the science plan was actually out of phase with the fiscal years. He inquired if having the planning year, the US fiscal year, and the operational year out of sync created tensions. Humphris stressed the importance of forward planning with the ship in the Southern Ocean, largely because the weather and logistical problems need to be addressed far in advance. Briden said that the question really is whether the financial process is up to the job to enable effective science planning. Pisias, Humphris and Detrick all agreed that no real problems have been encountered in working the budget out.
Detrick asked what would happen with Leg 188 (Prydz Bay) if the conditions set by SCICOM were not met. Humphris responded that if the problem was the acquisition of an ice boat, then the leg would be removed, and scheduled later. If the problem involved the scientific approach, however, then the leg would be removed entirely from the schedule.

EXCOM Motion 98-1-4

EXCOM approves the Science Plan for FY 1999 (Legs 182 - 186) and the scheduling of Legs 184 to 188 determined by SCICOM/OPCOM at their August 1997 meetings.

Proposed by Leinen; seconded by Mével. 15 in favor; one abstention (Feary - Co-Chief of Leg 182)

5.2 FY 1999 Preliminary Budget

Pisias showed an overhead of the cover of a book on Lewis and Clark and noted that good communications were critical to the success of their expedition.

Pisias presented the preliminary FY 99 budget which was predicated on the FY 1999 Science Plan [Appendix 1]. This budget was refined during two retreats: (1) JOI staff, and (2) the JOI managers. Subsequent to the second retreat, JOI received a revised budget from ODP/TAMU. Thus, the budget is basically correct although some of the numbers in the budget presented to EXCOM do not add up. The target budget from NSF is for $48.5 million and the preliminary FY 99 budget is at $49.4 million, resulting in a deficit of $900 K. The issue at hand is how to correct this deficit. In considering this, Pisias examined the X-Based budget given to SCICOM in August, and their prioritization of items. The X-Base amounts to $3.261 million. Most of the items on SCICOM's prioritized list have been crossed off.

Ways to address the deficit include the utilization of savings from FY 98, if there is any uncommitted carry forward, additional cost savings in fixed budgets, which will be difficult, and obtaining more than $48.5 million dollars (this figure is based on assumptions, detailed previously by Heinrichs, which may or may not be borne out).

Pisias outlined a process and timetable to address the $900 K FY 99 budget deficit. At a meeting at the JOI Office on the February 11, JOI, the subcontractors and the SCICOM Chair will try to arrive at a solution with a series of options. If necessary, these options will be referred to SCIMP, and then SCICOM for prioritization. The subcontractors, and the SCICOM Chair will again meet with Pisias in Boulder on March 21 to try to finalize the budget. If the budget is not resolved at that time, then BCOM will meet (March 31). The hope is that it will not be necessary for BCOM to meet. A final budget will be presented to EXCOM for approval in June.
Discussion
Detrick said that he liked the timetable because it gives the JOIDES Structure and the managers adequate opportunity to set the priorities and make decisions. Briden noted the percentage changes between FY 98 and FY 99 in Pisias' overhead (Appendix I). The biggest change is the $1.3 million increase in the fixed budget due to the new day rate. Pisias reminded EXCOM that NSF initially told JOI that they could count on a 1.5% increase in the growth of the Program, and this is what the Five Year Plan is based on.

Fox explained that the required re-negotiation of the day rate was market driven. Current day rates for platforms like the JR range from $80,000 to $200,000. Because of the type of contract that ODP has with ODL, the day rate for the JR is now about $55,000 - $60,000. Initially, Schlumberger wanted an annual increase of $6 million. In the end, it was increased by $1.5 million. Fox said that TAMU recognized the market forces and the realities under which ODP currently operates. The day rate agreement has a number of components (see details in the Agenda Book). It will rise through time linked to an inflationary index, the consumer price index, instead of the producer price index, as was formerly the case. The producer price index has not increased in the past year and a half, which was a great benefit to the Program. As a consequence, some cost savings have been realized. In addition, the cost of fuel is going down.

Heinrichs requested clarification regarding the change in cost of the hard rock coring system from $400K to over $1 million in the revised X-base budget. Fox explained that this is the result of a number of things, including the proposed purchase of percussion hammer drills to have ready to respond to expected proposal pressure. ODP-TAMU expects that such pressure will arise as the ship enters the east Pacific (i.e. drilling on the East Pacific Rise). TAMU has included these items in their FY 99 budget, but it is not essential to purchase these items in FY 99.

Taylor noted two items that add up to $800 K - $200 K in www expenses and $600 K in hard rock coring. These are significant in that the next item, the expansion of the Downhole lab, is crossed off the list. He expressed surprise that the budgeting and purchase of items like hammers can replace such a long term planning effort as the Downhole Measurements lab. Fox responded that the lab will cost more than $1 million and that the estimate of $400 K listed on the overhead is wrong. The expansion of the Downhole Measurement lab could be done on a step-by-step approach. Taylor further noted his concern that a large part of a NEW Program would be cut out by this situation. Following the discussion of the FY 99 budget, Taylor said that he was happy with the cutoff line withdrawn below CLIP II, but wanted to see the issue of the Downhole Lab remain an important priority for ODP.

Briden commented that it is not only innovative items, such as the Biosphere initiative, which slip off and just miss out that are of concern. He added that we are way off target in maintaining the innovation and cutting edge technology with the current program. Briden suggested that if ODP is to operate as it should in Phase III, the option of hunting for funds to support these efforts should included. Pisias said that the FY 99 problem of
the $ 900 K deficit must first be solved, and then the longer term situation to which Briden was referring could be tackled.

Detrick said that he was comfortable with the approach, which involved managers and the JOIDES Structure, and the timetable presented for finalizing the FY 99 budget, and the strategy (incremental approach) being considered for the expansion of the Downhole Measurements lab.

Harrison asked if saving in publications had been achieved because of the decision made in June by EXCOM. Pisias responded that projected savings integrated over five years amount to $ 1.9 million.

Beiersdorf noted that the Program is suffering because the partners are not able to increase or meet their levels of contribution. This must be conveyed to the decision makers. A very detailed analysis of what the Program will not achieve will be presented to the ODP Council in June 1998.

**EXCOM Consensus 98-1-5**

By consensus, EXCOM accepts the preliminary FY 1999 budget, and requests JOI to proceed with further development and refinement of the budget, in conjunction with the JOIDES Advisory Panels and subcontractors, according to the timetable outlined by ODP Acting Director, Nick Pisias.

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### 6. Addressing Phase III Funding Shortfalls

#### 6.1 Phase III Budget Projections. How Big is the Problem? TAB 6

Detrick noted that the recommended budget growth rate of 2% in the ODP LRP is not being realized. NSF has indicated a rate of increase of 1.5%, but this number is based on contributions from new members. EXCOM is already aware of the problems facing the ODP with respect to membership. The impact of the increase of the day rate includes a day rate “bonus” of $ 1 million dollars, to be paid annually starting in FY 1999.

The FY 1999 predicted budget deficit was to be $ 770 K; in actuality, it is $ 900 K. This situation can be fixed internally in FY 1999, but the situation worsens in the out years. Over five years (1998 - 2003), the impact of day rate and inflation results in a total deficit of $ 5.86 million in FY 2003. Pisias said that he saw no way to address this without losing services.

#### 6.2 Strategies/Options

##### 6.2.1 Recruiting New Members TAB 7

One way of obtaining new sources of money is by looking for new members. To this end, ODP is currently working with a group from South Africa, and Jamie Austin will travel to Brazil this summer to continue efforts to interest that country in joining ODP.
Discussion
Detrick noted that recruiting a new member each year over the next five years is unlikely to happen, although there is the potential to recruit one or two new members over time. New Zealand, Brazil, India, Mexico are possible targets. Eldholm urged that Russia be followed up on, possibly by Germany. Briden recognized the achievement that the previous ODP Director, Dave Falvey, made with respect to internationalization, saying that Falvey has been instrumental in all that has been achieved recently. Regarding potential targets, Dalrymple pointed out that Dave Falvey was already engaged in conversations with South Africa and Brazil. He added that, at this EXCOM meeting, it was learned that France has approached these two countries. He asked, "Why are we doing this?" Detrick replied that ODP is seeking new partners to increase the budget. Dalrymple then questioned the propriety of other member countries (i.e. France) which approach the same countries that ODP has already engaged in partnership discussions. Stoffa said that he was astounded that France would even consider approaching other countries already contacted by ODP as a means of filling in their lack of internal support, instead of trying to gather that support internally to change the situation. Møré agreed that France's activities on this front should probably be done through ODP and stressed that France's intention was to try to find a way not to leave the Program.

Leinen suggested that the benefits of associate membership be re-examined in order to ensure that it is not advantageous for a potential to become a 1/3 partner with an existing partner. ODP may be doing itself some harm, if ODP is making it advantageous for another country to join with an existing one over becoming an associate member. She requested that JOI consider the policy to recruit new members to determine if there are issues that need to be clarified. Detrick concurred, stating that this needs to be done anyway due to changes linked to the new JOIDES Advisory Structure. Feary said that in the negotiations Australia and Canada had with potential partners, it was made clear that it was better to be a part of a consortium. Leinen added that there needs to be a clear attraction for new partners to participate as associate members. Dalrymple said he disagreed, adding that perhaps it would be a good thing if new consortiums were formed. The problem currently before EXCOM is France. In theory, the current ODP policy will not permit France to form a consortium, but policies can change.

Heinrichs said that there must be both structure and strategy in place recruiting new members, with appropriate follow-up - a process that implements the strategy. Heinrichs added that the former director used a random process and there was no follow up. Admiral Watkins forcefully interjected that Heinrichs' statement was unfair. He continued that unless Dalrymple's question, "Why are we doing this?", was answered, the incentive was undermined. Watkins said that poor NSF follow up has delayed China's participation in ODP. He added that there is lot of blame to go around and stated that JOI is doing its best. Heinrich said that partners must be recruited for intellectual input and benefit, to which there is a financial aspect.

Berger said that he discovered at the port call in South Africa that there are ways other than just through academia to gain access to the decision-makers in government.
Contacts in business, industry, and the military should also be considered. Feary said that the only way is through industry - government listens to industry. Eldholm suggested that ODP should discuss potential partnerships at Ambassadorial levels. Such an approach would provide an incentive for scientists in potential partner countries to work more enthusiastically towards ODP membership. Beiersdorf recommended consideration of the highly successful IPOD membership strategy of the late 70s in which higher ranking people were contacted first. Heinrichs advocated a two pronged process - a first level of development involving the science community of the country, followed by the approach of higher level figures. Stoffa questioned why the ODP Council was not charged with soliciting new partners and why it always fell to JOI. He queried why the other countries do not participate in this effort since ODP is a partnership. Feary pointed out that while JOI had taken the lead in approaching Chinese Taipei and Korea, Australia and Canada were very involved in the recruitment effort.

Taylor suggested that taking China to full membership should be pursued, and cited as a reason the large scientific population. The draft MOU is set on 1/6 membership for the next three years. There had been a section stating that "the partner would try to go to full membership as soon as possible", which was struck out at the request of the Chinese negotiators. ODP cannot renege on this point. Taylor urged contact with China on the matter at a higher level. Heinrichs said that the effort to recruit China was hamstrung internally by circumstances within the US State and Defense Departments. NSF was forbidden to directly communicate with China. Instead, communication was channeled through the NSF International Division, in accordance with the S & T agreement.

Leinen said that Taylor was really asking about China's capability and potential to participate as a full member. Although China has an enormous geology potential, not every department has marine geologists - only three universities have Marine Geology in their mission. Pinxian Wang is the Le Pichon of China and his guidance was very important in garnering support from all the geological institutions for China's membership in ODP. Taylor said that some of the approaches at the ambassadorial level could be coming through the member countries, so that our European, Japanese, Australian colleagues, in addition to the US State Department, can be talking at that higher level with China. ODP has not been using its intentional presence effectively in recruiting new members.

In light of discussion, Detrick suggested that JOI reexamine the present membership recruitment strategy to see how it could be improved and changed. In thinking of a future program, Stoffa recommended that a more efficient recruitment mechanism be established, with shares in memberships and a certain return based on levels of participation. He said he wanted to see this included in this kind of revisiting of the strategy. Admiral Watkins said that more than just the revision of associate membership level definition is required; the issue is how the process will work - from the top down, as well with scientists from the bottom up. He added that when countries are currently approached, the effort is not orchestrated well at the highest level. The State Department is a disaster now. The science and technology advisor in each of the US embassies is relegated to the third string and not a part of the decision making process in events like the recent Global Climate Change Conference. Moreover, when a team like NSF goes to
China, the ambassador is not tasked by message from the State Department to give support. These are the things that really will make a difference. ODP must face the larger issue. Utilization of the ODP Council is a mechanism that should be worked into the solution in JOI's revision of the recruitment process. Watkins added that while he did not object to JOI being tasked with the strategy, the approach is bigger than JOI and requires top level people in these agencies to work with JOI.

Detrick suggested reinstating the former Internationalization Policy Advisory Committee (IPAC) which was advisory to the JOI Director. Three people (Stoffa, Eldholm, Feary) were identified to serve in this capacity for the sake of continuity as there will be a change in leadership at JOI.

EXCOM Consensus 98-1-6

By consensus, EXCOM establishes an advisory committee composed of Feary, Stoffa, and Eldholm to work with the acting and future ODP Director in recruiting new members to the Program.

6. 2.2 JOI Strategy for Implementing Partnerships with Industry and Other Types of Partnerships

- Moore Initiative

Partnerships were discussed previously as a strategy for getting external funding for technology development. One strategy involves establishing an industrial associate “fund” in order to promote partnerships between TAMU and industry, specifically with respect to hammer drilling. Interested companies paid a subscription fee to the “fund”, and in return would have access to ODP reports that are not public domain, and participate in the testing. JOI has received a request from the Science Operator to establish this activity. A second approach involves a cooperative agreement with JAMSTEC as set out in an MOU. Third is the Special Technology Development Fund in which ODP partners contribute money to the Program for specific engineering development. Finally, Ted Moore has presented JOI with a strategy for initiating ODP/industry partnerships through scientists at industry research labs. Moore’s initiative is focused on the USA, but could be expanded to be international.

Discussion

There may be other US agencies beyond NSF, like NOAA or FEMA, which may have an interest in ODP. Humphris noted the congressional hearing related to the Methane Hydrate Research and Development Act of 1997, which will be attended by people from ODP (*Goldberg). Admiral Watkins mentioned NOPP, the National Oceanographic Partnership Program, and his vision of how ODP could fit into the framework as an “ocean observatory”. Agencies such as NOAA, ONR, EPA and others have had $10 million dollars tagged on to their budgets to fund NOPP. There is an international components - Japan has expressed interest.
European/Industry partnerships. Beiersdorf noted that there are initiatives in Europe involving industry and science. One example is the Hydrate Autoclave Coring Initiative (MAST 3 Initiative). This group desires greater collaboration with the Science Operator and asked that the issue be raised at EXCOM. Fox responded that representative of this initiative have already made two or three visits, and ODP/TAMU has loaned them the Pressure Core Sampler, which they are improving. TAMU has expressed a willingness to collaborate with the Hydrate Autoclave Coring Initiative, falling short of supplying a dedicated engineer. If EXCOM agrees that this could be an important tool, then TAMU could provide more support, but it would have to be prioritized against other items in the budget. Detrick said that EXCOM could encourage a dialogue between this group and TEDCOM. Pisias said that he was having a difficulty understanding what level of cooperation was being requested. Beiersdorf will tell the Hydrate Autoclave Coring Group to work with TEDCOM, which can submit a recommendation on action to the SCICOM Chair.

Mével mentioned discussions between France and oil companies, who have indicated interest in, and the willingness to contribute resources to, specific projects. Issues of confidentiality and intellectual property will need to be addressed. It was noted that the ICDP has Schlumberger as an industrial partner. Thus, France has an entity that already has a major role in ocean drilling in its own country that could be approached.

Other industry partnerships. Mutter said that in the past a relationship between the oil industry and academia existed because they supported graduate students. The nature of the relationship must be different now because industry is focused on specific projects, with a product at the end. He expressed skepticism regarding the proposed Moore initiative. Pisias said it was necessary to establish the relationship first, before asking for money, and a need to define what ODP can do for potential industry partners, and a need to plan quickly to be executed within a year. ODP/TAMU has and will continue to participate/exhibit at AAPG and the Offshore Technology Conference.

Project-specific collaboration has not been done by ODP. It was agreed that this should be pursued. Stoffa recommended contacting Gordon Greve (Chair of 1996 ODP the International Review Committee). Beiersdorf pointed out that there are industry representatives to certain ODP panels who can be called upon to assist. Mutter advocated a focused strategic effort, not phone calls to someone every other week. He said there was a need for an individual whose full time job would be to search out industry projects and establish collaborations. Universities that have done well in this area have a dedicated person in the job of seeking industry/academic partnerships. Pisias will approach Moore to request that he follow up on the groundwork he has laid, and to determine the appropriate way to approach those in the upper echelon in industry. Briden noted the danger of confusing what should be done through JOI versus the role of national committees in approaching industry in their own countries.

Briden said that the EXCOM consensus seemed to be that a high and low track are important in recruiting partners, and involving industry. The OECD (Organization for Economic and Commercial Development) represents another high track.
EXCOM Motion 98-1-7

In light of a desire to increase the overall funding of ODP by addition of new members, EXCOM requests that JOI update its strategy for international participation. In particular attention should be paid to (1) identifying the benefits of Associate Membership so that there are adequate incentives for increasing contributions toward Full Membership, (2) suggesting the role that the ODP Council should play in assisting JOI, (3) identifying the elements of a multi-faceted recruiting strategy including appeals to industrial, political, and mission agency constituencies, as well as academic communities and international organizations (like the OECD).

Proposed by Leinen; seconded by Nowell.
14 in favor; two abstentions - Mével and Taylor

6.2.3 Cutting Costs within the Program

- Possible Options

The restructuring of Information Services at ODP/TAMU has been identified as a possible source of cost savings. $100 K has already been identified and there are potential savings associated with the evolution of JANUS. ODP/TAMU has not been able to develop their computer systems in a logical way because of ongoing problems with on and off again funding for computer technology. A professional from Oregon State University will assist ODP/TAMU in identifying strategies for cost savings, however, savings will not be large.

The outsourcing of ODP Publications will save money only if ODP outsources to a firm that will subsidize the Program. Otherwise, the Program can save only a little bit - not millions of dollars, but more on the order of $100 K.

JOI requested that EXCOM charge JOIDES to examine the LRP in light of the long term budget projections and begin serious discussions about what major programmatic changes can be made.

6.3 Discussion of Action Items Addressing Phase III Funding Shortfalls

EXCOM Motion 98-1-8

Presently determined budgetary constraints through 2003 will negatively impact the delivery of the Long Range Plan. EXCOM asks SCICOM to prioritize future science objectives to maximize the objectives of the Long Range Plan, clearly indicating those which cannot be achieved under existing budget projections. SCICOM should also identify and prioritize changes in program activities, services, equipment needs and technological development. SCICOM is asked to forward its report to EXCOM by September 1998.

Proposed by Leinen; seconded by Prior
Unanimous acceptance
Discussion:
Stoffa suggested that it should be explicitly stated that there are certain types of programs that ODP will not do because of budgetary constraints.

Humphris said that a document (report requested in EXCOM Motion 98-1-8) could be available for EXCOM to comment on in September, following SCICOM and JOIDES examination and input. Prior wondered why the reporting back is so far into the future. Humphris explained that the timing of SCICOM meetings with respect to EXCOM dictated this. Briden said this is a complicated, urgent process between money and operations and suggested that EXCOM could meet earlier in the Fall. Detrick said that if necessary, EXCOM could meet. Detrick noted that the short term issue of the $900 K deficit in FY 99 will be addressed by Pisias' timetable for action.

7. SCICOM Report

7.1 Implementation of the New Structure - Update on PPGs

Humphris reviewed the implementation of the New JOIDES Advisory Structure. An update on meetings that have happened, including OPCOM, since EXCOM met in June 1997 was provided. Humphris reviewed establishment of PPGs, the status of membership on them, and the selection of Co-Chairs. The Long term Observatory PPG will publish a handbook in 1998. At AGU there was an InterRidge Meeting that was dominated by a discussion of ODP proposals potentially linked to the Architecture of Oceanic Lithosphere PPG. Since EXCOM met in Brest, SCICOM has established a PPG on gas hydrates.

Discussion
Pisias asked why two diverse groups with different shallow water strategies were merged into the Scientific Drilling of Shallow Water Systems PPG. Humphris replied that the Environmental SSEP had recommended a single, more general PPG as both groups are faced with similar technological issues. This PPG does not have a direct liaison relationship with ICDP, but rather an indirect link through SCICOM. Taylor noted the ICDP is investigating drilling from barges. For this reason, Leon Holloway (ODP/TAMU) will attend an ICDP meeting. Pisias indicated that USSAC funds to support PPG participation are very limited.

7.2 SCICOM Voting Procedures

Due to changes in the Advisory Structure, the original PCOM motion regarding voting procedures leading to the determination of a drilling schedule is outdated. In August 1997, SCICOM revised the wording of the motion to be in line with new Advisory Structure.

EXCOM Consensus 98-1-9

By consensus, EXCOM approves SCICOM voting procedures leading to the determination of a drilling schedule [SCICOM Motion 97-2-4].
7.3 Dry-Dock Recommendations

SCIMP was asked by SCICOM in April of 1997 to prioritize items for the FY 99 mid-life refit of the *JOIDES Resolution* (dry-dock) with respect to the then-projected budget. In August, SCICOM looked at this prioritization and recommended that the expansion of the Downhole Measurements Lab be carried out during the mid-life refit of the ship, if sufficient funds were available. The Microbiology Lab required an investment of about $0.5 M. SCICOM noted the NSF/NSB ODP review comment that the Deep Biosphere Pilot Project should be approached in a more measured manner. SCICOM suggested that a better approach was to deploy a special container to serve as a lab for legs that required it and to treat the cost as a leg-related item. Therefore, SCICOM recommended that the definition, and preservation, of space for a containerized Microbiology laboratory on board the *JOIDES Resolution* be carried out during the dry-dock. SCIMP was asked to investigate the availability and cost of outfitting a container which would serve this purpose. The Microbiology Lab is at the bottom of the SCICOM budget prioritization list only because a different strategy will be employed for its acquisition. It does not signify it is the lowest priority.

7.4 Selected ODP Achievements for Legs 173 to 176.

Humphris reviewed selected ODP achievements since last EXCOM. Leg 175, which investigated global carbon budgets, paleocirculation and climate, was successful on a number of different fronts - 8000 meters of core were recovered from sites along the west coast of Africa in spite of site survey issues, restrictions from PPS, and political issues. As a consequence ODP has a super record from late Neogene on the strength of the Benguela current. Berger (Co-Chief) congratulated the German scientists saying that their preparation and survey work allowed the best sites to be drilled, and this was the reason for good recovery.

Leg 176 extended work done on Leg 118 by drilling on a transverse ridge of the Atlantis Fracture Zone. ODP now has a 1500 meter section of gabbros showing the definition of individual magma bodies, and individual feeder dykes. Sections recovered are zoned differently than models based on ophiolites. Hole 735B is the second deepest hole that ODP has drilled.

Leg 174A drilled in unconsolidated sands and recovery was poor. However, some of major sequence boundaries of sea level decreases and onlaps were defined using LWD, allowing cross correlation between holes.

Leg 174B CORKed Hole 395A. A new logging tool was tried on the leg which permitted the detection of zones of high permeability. Identification of the zones where water is being sucked in reveal important formation about the hydrogeology of the oceanic crust.
TUESDAY January 20 8:30 AM

8. Management and Operations Reports

8.1 JOI

8.1.1 The 1999-2000 JOIDES Office

Proposals received for the 1998-2000 non-US JOIDES Office were evaluated by a technical evaluation committee and for cost. EXCOM approval of JOI’s selection of Geomar, Germany, was solicited by email. EXCOM approved this in November 1997 and NSF has now formally authorized the selection.

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

Addrs for these positions have appeared at AGU, in EOS, and Science. At the time of the EXCOM meeting, 18 candidates had applied for the new Assistant Director position. JOI anticipates interviewing in early March. Letters will be sent out in February.

Nowell is the Chair of the Search Committee for the new permanent Director. Nine applicants (5 from US and 4 non-US) are under consideration. JOI hopes to interview in February and make decisions soon thereafter. It is not as easy as last time because the Program is slated to terminate in four and a half years. For this reason, it may be difficult to appoint a high quality person.

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

Pisias outlined the implementation of the electronic publications policy as directed by EXCOM. The IR publication will consist of a booklet summarizing the initial results bundled with a companion CD which will contain the detailed results and data. The SR volume will be on CD, consistent with the directive of EXCOM. JOI is looking into an outsource so that print on demand may be available for those who request this. The CD will be easily readable on a computer screen, but the book will be more a manuscript type that the SR volume was in past.

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

Elsevier is the only publishing group that JOI has engaged in discussions on outsourcing. In informal discussions between JOI [Pisias] and Elsevier, JOI has learned that Elsevier is interested in only post-publication activity. Since Elsevier does not want to do production, ODP would retain production to the point of electronic publication. When Elsevier was informed that the ODP costs of producing CD ROMs has dropped, they were less interested in taking on ODP publications. Berger noted that there is also experience with AGU and GSA. Previous experience with AGU [Mo Raymo - Leg 162]
indicated that AGU will do it, but at a cost. If ODP has to pay such publication costs, then all potential savings will be exhausted. Pisias said he was still trying to sort things out. Detrick referred to the motion passed in Brest saying that it voiced the intent of the EXCOM directive on the outsourcing of ODP publications. Feary commented that the EXCOM intent was for JOI to provide advice on whether to go forward or forget it. Pisias noted that anything that ODP produces is not copyrighted, so anyone can use it to produce a value added product. Harrison said that AGU would be interested in such a prospect. A problem would arise if they demanded copyright, which they cannot have as the MOUs require availability to all member countries. Dalrymple said that there were two separate issues (1) outsourcing - what we know now is that having publications is where it is now (ODP-TAMU) is best; and (2) the enhanced post production possibilities are still wide open. Pisias said that anyone who takes it on so far has said they do not want to take on an uncopyrighted product. Dalrymple noted that the goal is to save money, and if there is not big money saved, then there is no need to go forward. Detrick requested JOI to go forward, as directed in EXCOM motion 97-2-7, and report back in June.

**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

Two things post-date the JANUS report in the Agenda Book. Following a two day visit to ODP/TAMU reviewing the databases, information handling and programming development. Pisias changed a directive in the JANUS program with respect to development platforms. He observed that TAMU has been trying to develop all input data on all platforms that are available on the ship. As this will cost money in development and is not very cost effective, he has told them to focus on appropriate platforms. Given the budget situation, and the fact that the data migration priorities have always been low, Pisias has also recommended that the data migration contract not be let, and an evaluation of how else migration could be achieved in a cost effective way be carried out.

8.1.6 Public Affairs Subcommittee Update - Recommended Strategy for PR and Port Call Activities

Baker-Masson distributed a six month report to EXCOM (Appendix 4). The success of the New York Port Call was noted. Port call PR activities reached huge audiences - via television (35 million), radio (8 million), newspapers (4.5 million) and the wire services (2 million). A Scientific American reporter sailed on Leg 174A and the corresponding web page that was set up received 100,000 hits per day.
The great recovery of the K/T boundary on Leg 172 has continued to spur efforts to reach the five audience groups targeted in the ODP Public Affairs strategy. A Poster of the Leg 172 K/T core was produced late fall and distributed to all member countries. A replica core is on display at the Smithsonian. John Orcutt (absent), Chair of the EXCOM Public Affairs Subcommittee, has expressed interest in another replica core for public display at Scripps.

As a result of the recent managers meeting, there has been a refocusing of ODP Public Affairs priorities, which were discussed and approved by Subcommittee. These priorities are:

1. Maintain ODP visibility in all partner nations. In particular, retain interest and visibility in ODP in member countries when the ship is out of their part of the world.

2. Plans for FY 98 include highlighting the 30th anniversary of Ocean Drilling with a series of events, including participation at conferences. There are four targeted in 1998 - AAPG, OTC, AGU, IPC (Lisbon in August). ODP has been invited back to OTC, but not to exhibit in a booth.

3. Port Calls - there will be a port call in South Africa in April 98 with events to support John Compton (South African contact) in ODP's effort to recruit South Africa. In Australia, an effort is underway to change the port call from Townsville or Wellington to Sydney, where ODP can obtain higher visibility. JOI and TAMU are already considering port call activities in FY 99 - Hong Kong and Japan.

4. Information/Resource materials. New artwork and graphics are under development and three new brochures are slated for production. In addition, there will be the preparation of a general annual report which will include operations, as well as scientific accomplishments. The aim of the annual report is to produce a brochure that is topical, dynamic and interesting - like the "Greatest Hits" brochure - which could serve as a potential sales piece for new members.

5. Briefing Papers. There is a plan to develop a series of briefing papers concerning topical and relevant ODP issues that may be used to promote the Program through US Congressional Relations. New opportunities of US funding for ODP are available. Public Affairs will organize US congressional Briefings. The Gas Hydrates briefing scheduled for early February is an example. All information will be shared with member countries.

6. Media efforts will be maintained and initiatives in member countries expanded.

**Discussion**
Harrison asked if ODP had organized exhibits at meetings like EUG. Baker-Masson responded that they had been asked to do this by the French SCICOM representative, Ludden, but that JOI did not have enough materials to send. This is why they intend to develop some. Harrison also encouraged an ODP exhibit at the Western Pacific AGU
Meeting in the summer of 1998 in Chinese Taipei. Mével said that France had requested ODP cores to display and were asked to pay for someone from TAMU to escort the cores. Baker-Masson noted that displaying cores is costly because they are delicate. ODP has realized the value of displaying cores and that the production of replica cores, which do not require a human escort, is a good investment. Eldholm said that he was impressed with the ODP exhibit booths at AGU in San Francisco. He requested that EXCOM be put on the distribution list for any new ODP brochures so that members can use them when they approach their respective funding agencies. Mutter said that a different approach was required when targeting industry. It was recommended that ODP (JOI/TAMU/WLS) consult with a knowledgeable person before establishing an exhibition booth. Baker-Masson will request assistance in identifying people (panel industry members, etc.) to attend and assist JOI with these efforts.

8.1.7 PEC V

The next Co-Chief review, now under the supervision of JOI, will occur at the end of this year, and will serve as the start of the process leading into PEC V. The next task for JOI is to set up the committee. The PEC reports to JOI, and JOI reports the findings of the committee along with their response, to NSF. It is a part of the contract between JOI and NSF. The role of the PEC is to look at the management and operations of the Program. The PEC V report to EXCOM will be a part of the process. Pisias reported that JOI would like PEC V to focus on programmatic aspects/elements of the Program and to provide input on issues such as how to handle the budgetary situation.

Discussion.

Mutter asked why NSF wanted this report and inquired about NSF's response if PEC V reports something problematic. Heinrichs explained that the primary reason is to see that operations and management are carried out in an effective way. JOI develops the PEC mandate in consultation with NSF. In the past, the PECs have had a broad mandate. The PECs were not restricted and had more expansive charges than required by NSF's contract with JOI. Pisias said that with respect to PEC V, JOI wishes a very focused PEC review, not another management review as these have occurred recently within the Program. Taylor noted that JOI wants a programmatic review, which doesn't sound like management and operations. He acknowledged that there is a mismatch here, but expressed confidence that NSF and JOI would work it out.

8.2 ODP/TAMU Management Report

8.2.1 Update on the Day Rate of the JR

Fox reviewed the history of negotiations surrounding the day rate. An MOA between ODP/TAMU and ODL was finalized in December and forwarded to NSF. The outcome has financial consequences and includes several adjustments. Among these is the adoption of the Consumer Price Index (widely used, but more volatile than the Producer Price Index), as the inflationary index. In FY 99 the new day rate results in an increase to the Program of $745 to $786 K. In order to get ODL to agree to an inflationary index that was less volatile than others, ODP/TAMU agreed to pay $1 million in compensation to
ODL on October 1 every year. The $1 million compensation is embedded in the core costs on the TAMU budget. This represents a modest increase in the day rate relative to the market forces. Although it will be a struggle to live with, the new day rate represents some generosity on the part of the ship owners, who are grateful and pleased to be involved in this unique operation. Detrick commended Fox and his negotiating team for their efforts.

8.2.2 Major Technology Development in ODP Phase III

**Status of the Active Heave Compensation System**

The active heave compensator is a project to take the passive heave system to an active system. Currently, active systems are routinely installed on platforms being built. The JR's passive system is the largest on a drilling platform. The project was presented to TEDCOM in fall of 1995, and was approved contingent on simulation studies. SCICOM reviewed the project in April 1997 and identified it as a high priority. JOI and NSF authorized the project and ODP/TAMU prepared a statement of work. Six companies were approached, and after bids were evaluated, RETSCO was identified as the successful bidder. Contract negotiations were started, but subsequently unraveled, the project is on hold. The individual who developed the software that essentially drives the active system left the company. A licensing agreement for that software between this individual and RETSCO came apart and the analyst has challenged RETSCO, and all potential purchasers, with a lawsuit. In addition, he informed ODP/TAMU that there were problems with elements of the design that RETSCO proposed to modify the passive system to an active system. ODP/TAMU and ODL are evaluating the legal and technical allegations, and will review the project as soon as possible. There are currently $1.2 million dollars committed to the Active Heave Compensation project which could be diverted to some other aspect of the Program.

**Discussion**

Heinrichs asked what the time frame would be if the deal fell apart. ODP/TAMU will go out for bids again. This will not slow up the process too much because the companies are already familiar with ODP's requirements. The cleanest solution, however, is to buy a brand new active heave compensation system off the shelf; this would cost $4 to 5M. This hiatus in the project development will affect all legs. The active heave system would be particularly advantageous for Leg 180 and 183, and would have permitted better recovery by reducing heave on Leg 177. In addition, it is necessary for the diamond coring technology.

**Status of Hammer Drilling System**

The hammer drilling test, conducted in early fall 1997, addressed questions regarding the longevity of the pneumatic hammer and bit degradation. The results indicate that the system can function for 32 hours without degradation, which is very good as TEDCOM had recommended a threshold of 12 hours. The hammer closing forces to initiate the hydraulic hammer were reduced by a factor of 3 to 4 to a level that would accommodate (in fact are well below) the strength of the drill collars. In the tests, penetration rates in
hard, hostile rock environment 4 to 5 times that of the rotary bit were demonstrated. ODP is on track with this engineering project.

**Discussion**

Mével asked if there was adequate site survey information for the test site. Fox responded that the test is of the equipment. ODP/TAMU, however, has worked closely with Henry Dick and Jim Natland and have sufficient site survey data for testing at this site. The first test will drill on the wave-cut platform, and then subsequently on the slope and valley. The equipment will permit spudding in at an angle at 45°. Drilling will not be done on the floor of the rift valley in deep water.

8.2.3 Update on Joint Ventures

ODP/TAMU is moving on two fronts with respect to JIPs (Appendix 5). The most mature is the hammer drill and casing system. Prior to the Brest EXCOM meeting, a presentation was made to the Drilling Engineering Association (DEA) in Houston to define the project. There was considerable interest and ODP/TAMU was invited to put their developmental initiative on the DEA web site, and invited to the third quarter meeting to provide a detailed briefing. At this meeting, 15 industrial representatives requested that ODP/TAMU keep them updated on progress. At the fourth quarter meeting, ODP/TAMU provided input from the fall tests. Based on these conversations, a number of companies have expressed interest in collaborating with ODP/TAMU as industrial associates. TAMU has referred this to JOI and are considering an appropriate subscription fee ($25,000). ODP/TAMU engineers will submit a paper on the hammer drill system at the Technology Conference in February.

ODP/TAMU is a partner in the Conoco-Hydril JIP. This group has inquired about buying some engineers’ time from ODP/TAMU in the next one or two years (half-time FTE).

**Discussion**

Briden stated that dropping the data migration project is another failure to outsource and a failure to compete part of the Science Operator’s activities. The matter goes back to the solicitation of expressions of interest in 1995 for 1998 to 2003. Expressions of interest were received for all Information Services, and the proposal to compete that part of the Science Operator’s activities was controversially rejected by EXCOM. The understanding from ODP/TAMU, which they honored, was that they would outsource what they could - data migration. Briden wanted it noted that efforts to open up ODP and compete services are not progressing.

Pisias responded that he had looked at Information Services at TAMU and considered what could be outsourced. Termination of the data migration project contract will not stop the process, but define it in a slightly different way in order to know what ODP is saving.

8.3 Wireline Logging Service Report (Goldberg)
Leg 175 incurred a tool loss (sonic/induction toolstring). Reimbursement to LDEO/WLS for the amount of $50,000 deductible from insurance was requested from JOI. Current engineering developments include the Wireline Heave Compensator, the Temperature and Acceleration Pressure Tool, and Active Heave Compensation. There have been some changes in the FY 99 Logging Program, including the removal of the APS and HNGS tools from the suite of logging tools. This increases operational risk and makes it more difficult to trouble shoot tool problems before logging operations.

JOI and LDEO are negotiating the renewal contract for ODP logging services for the period FY 99 through FY03. This is a result of a bid successfully submitted in 1997, and includes a continuation of a strategy to expand internationalization of ODP Logging operations. Two new groups at ORI (Japan) and the University of Aachen (Germany) will participate in ODP Logging operations as subcontractors to LDEO during this renewal period. The renewal cost of the Logging contract, increased international subcontract support, longer distances to port calls, and increases in the Schlumberger day rate result in higher base operating costs in FY99. The Schlumberger day rate increase depends on the tools deployed (and replacements) and, over almost twenty years, this increase has averaged 3 to 3.5% annually. The fixed costs associated with Schlumberger tools and insurance have increased by approximately $190 K in the FY99 budget.

9. Planning for IODP
   9.1 International Working Group - Concept and Relationship to ODP/IODP
   9.1.1 Background on IWG
   9.1.2 Summary of IWG Discussions
   9.1.3 IWG Letter to EXCOM

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. Purdy provided background about the IWG and its goal to acquire funding for an IODP. This program must be new and exciting, it cannot be more of the same. The US (Purdy) and Japanese (Maruyama) representative Co-chair the IWG.

Membership in the IWG is open only to potential sponsor organizations that have submitted “letters of interest”, but attendance is open to a much broader community. Members currently include Germany, Sweden, UK, EU, ESF (EMaPS and ECOD consortium) Australia, Canada in addition to Japan and the US. To stimulate science planning and address technical, management, organizational and financial arrangements, the IWG will draw on the expertise of the existing JOIDES planning and advisory structures. In a letter to the EXCOM Chair, the IWG asked for assistance in science, technical and budgetary planning. In addition, the IWG has requested that JOIDES develop more comprehensive definitions of the tasks outlined in their letter, and suggest mechanisms by which these tasks may be completed. The IWG will continue efforts to
refine costs estimates. Purdy said that this was the beginning of a long, complex, but hopefully constructive, dialogue. At this EXCOM meeting, he wanted to start the process to build a strong program that will continue beyond 2003.

9.2 Status of Planning for IODP Riser Drillship
9.2.1 Report and Recommendations of the CONCORD Meeting

H.C. Larsen reported on CONCORD, which was held in Tokyo in July in 1997, and organized with only about 8 months of lead time. Despite this, there were more than 150 international and Japanese attendees. Of the total participation, 60% was international with a strong US showing. Two thirds of the participants represented the established earth science ODP community, but the remainder represented a new group of more continental-based geologists. There were 6 different working groups (see Tab 26 and the CONCORD Report), each run by international and Japanese Co-Chairs. This approach established a new level of effective collaboration.

A number of recommendations and a prioritization of the science to be carried out with a riser vessel emerged from CONCORD (See Agenda Book., Tab 26, and Appendix 8). Understanding Subduction Zone Earthquakes (Working Group 4 - Subduction and Earthquake Processes) was identified as the first scientific priority. One important recommendation was the identification of the critical need to develop a riser system able to drill in water depths of 4000 meters as soon as possible. To this end, it was recommended that JAMSTEC should cooperate with ODP. Larsen revealed that he had only recently learned of the construction for CONOCO in Korea of a drill ship, bigger than the proposed OD-21 ship, which is 7 months away from completion (Appendix 9). The ship’s design includes a 25 inch riser (or 21 inch) with a 2500 m depth capability. The cost of the ship is $500 million.

Larsen summarized critical factors needed to sustain the progress in scientific planning made at CONCORD.

(1) Maintain and further develop scientific momentum of CONCORD. The solicitation and encouragement of preliminary proposals for riser science, and support of associated site investigations, for example, are needed to sustain the momentum.

(2) Improve Technology management first and foremost through a new order and level of industry involvement with scientific ocean drilling. Larsen said that more than just JAMSTEC - ODP/TAMU collaboration is required, and that the time is right to pursue industry collaboration as oil exploration moves into deeper water.

(3) Maintain a truly international transition to an IODP/OD-21 program, ensuring the inclusion of all current European ODP members.

(4) Japan needs to demonstrate a firm commitment to build the riser ship in 1998.

Discussion:
Beiersdorf suggested that ODP/TAMU carry out a survey of drill ships with risers. ODP engineer, Mike Storms, presented a document to USSAC in 1995 which contained such a survey. Leinen noted that scientific objectives dear to the heart of industry are missing from the CONCORD prioritization. Larsen explained that that industry representation was weak; consequently, although some of these objectives were considered, they did not rise to the top.

EXCOM Consensus 98-1-10

By consensus, EXCOM thanks Hans Christian Larsen and Ikuo Kushiro for an outstanding job in organizing CONCORD, and also JAMSTEC, ORI, Monbusho and STA for their combined effort in mounting this conference.

9.2.2 Status of OD-21 Vessel - Funding and Timetable

Maruyama reported that the OD-21 budget has been increased from $2 to 5 million for FY 98. In addition, $20 million has been allocated for a three years period for the development of a sub-sea floor system prototype. Development of the prototype, which includes a core sampling system and a long term monitoring system for legacy holes, is to be coordinated with JOIDES and ODP/TAMU. He reviewed the new budget for technological development (Appendix 10). With respect to the riser drillship, STA/JAMSTEC will need to request funds for design and construction of the ship in August, 1998. JAMSTEC expects an answer from the financial authority in late December, after which the budget will be submitted to the Japanese Diet for approval January 9, 1999. There are two issues at hand, design and construction of the ship, and coordination with JOIDES /ODP for its use in future drilling.

Tamaki reported that Monbusho, ORI, STA and JAMSTEC have set up a Japanese Advisory Committee for Ocean Drilling (JACOD). The purpose of the committee is to facilitate interaction among all Japanese scientists and engineers interested in ocean drilling and to furnish scientific, technological advice to STA, MONBUSHO, JAMSTEC, and ORI. The Chair will be Professor Kushiro. JACOD will send Japanese scientists and engineers to relevant international meetings. (Appendix 11).

Discussion

Eldholm inquired when the riser vessel would be available for international drilling. The estimate is the year 2005. It was noted that the CONCORD Report recommended that international drilling should commence from the outset, and that there should be cooperation between ODP and OD-21 regarding technology of use to both programs (ODP and OD-21) (See Tab 26, and the CONCORD Report). Watkins said that it is necessary to convince other scientists and the public that the riser vessel and IODP is a worthwhile investment for the future. ODP needs to reach a broader scientific community and demonstrate that the OD-21 drillship is a very useful tool.

9.2.3 JAMSTEC Technology Development Project
Kinoshita reported on the JAMSTEC Technology Development Project. The budget of this project is not directly connected to the construction and design of the proposed riser ship. The aim of the project is to focus on technology that will be needed by OD-21, and possibly be of use to ODP.

There are a number of mechanisms by which JAMSTEC can collaborate with ODP and the international community on this project. One way would involve opening up the bidding on the design and development of tools and parts to the international community. An ROV is planned to be a part of the Long-term Monitoring System. Japan has asked ODP for permission to be able to use legacy holes in some parts of world to deploy and test instruments, and inquired about the possibility of dedicating one or two engineering legs to the effort of these technologies.

Takagawa outlined the design details of the Sub-Seafloor Prototype system (Tab 9, Appendix 12). The goal of the special core sampling system is to get better cores with better recovery, to penetrate difficult formations, and drill as deeply as possible. The long term monitoring system for legacy holes is intended to provide ease of access to legacy holes. The active launcher would be an ROV.

Discussion
Detrick noted that the plan presented by Kinoshita was different from the one in the meeting book. Beiersdorf noted that, if JAMSTEC wanted to use existing legacy holes, problems could arise because of the re-entry cones.

Fox commented on how the JAMSTEC technology development projects would be compatible with ODP future needs and directions, as governed by goals of the LRP. The core sampling system is of interest because, as part of the active heave compensation system, TAMU is placing monitoring systems at the bottom of the drilling assembly to measure weight-on-bit variations and the change in torque. This mandatory first step will lead to the development of bumper and thruster subs which will finally remove the residual heave, permitting effective use of high speed diamond bits. In that sense both ODP/TAMU and JAMSTEC are focused on improving core recovery. ODP/TAMU and JAMSTEC engineers need to design a collaborative effort that will benefit both OD-21 and ODP. The second initiative is of less interest to ODP because a fly-in reentry system already exists that could serve the needs of ODP.

Stoffa asked whether the engineering legs mentioned would represent additional funds for the Program. Detrick responded that if the development effort was useful to ODP goals and compatible with the LRP, then it would be part of the goals of the Program. If the JAMSTEC technology development was not of high priority to ODP, but to the goals of OD-21, then this is something that might be considered.

Watkins inquired whether there was related technology development of interest to the oil and gas industry that could piggy back on the proposed JAMSTEC engineering effort. Fox replied that the oil industry has shown interest in the hammer drill casing because it is relevant to establishing the well head in unstable terrain. Since the oil industry does not
recover core, they are not overly interested in most aspects of the core sampling system. Watkins suggested that ODP make an effort to determine which specific elements of technology development interested industry.

Pisias concluded that the first step is to set down the expectations of both ODP/TAMU and JAMSTEC then determine how to pursue a mutually beneficial program.

**EXCOM Motion 98-1-11**

EXCOM recognizes the importance of the technological developments proposed by Japan (JAMSTEC/ORI) for the future of ODP and IODP, including construction of both enhanced drilling and coring systems, and long-term borehole monitoring systems.

EXCOM strongly encourages the formation of a mutually beneficial partnership between JAMSTEC and JOI, on behalf of ODP, for the development of drilling and coring systems.

EXCOM also encourages the development of similar mutually beneficial engineering development partnerships between ODP and other international programs, and industry.

Proposed by Tamaki; seconded by Mével

Unanimous acceptance

**9.3 EXCOM Response to IWG Letter**

**9.3.1 Timeline for IODP Scientific Planning (Pisias)**

- Conference to Define Science for Non-Riser Drilling
- COSOD III

Pisias summarized the steps he has proposed for a conference on non-riser drilling in planning for post-2003 ocean drilling (Agenda Book, Tab 27). The solicitation of white papers is intended to encourage an open meeting and the identification of leaders in the field. The call for papers could be advertised at different meetings, including the ICP in Portugal. According to the proposed time table, in January 2000 EXCOM would call for a conference (ICOSOD - Integrating Conference on Scientific Ocean Drilling) to integrate the scientific goals of the riser (CONCORD) and non-riser meetings in order to formulate a Long Range Science Plan for Phase I of IODP.

**Discussion**

Prior said that although references had been made to building strong industry partnership into the Program during this EXCOM meeting, partnerships with industry and other agencies that may want to support ocean drilling are not included as part of the initial thinking as plans are laid for the future. Pisias asked how this could be done. Prior responded that the oil and gas industry have a need for applied science, and that industry should be approached and asked what they need. If you take a plan to industry, you are less likely to be rebuffed. ODP needs to find ways to ensure the participation of industry scientists at these science proposed planning conferences.
Conference. Berger queried why the proposed conference was focused on non-riser drilling. Pisias replied that CONCORD approached riser drilling and there is a need to have a science plan for the second platform of an IODP. Berger worried that ODP would be sending a subliminal message that the riser technology is not all that it is cracked up to be with a non-riser drilling. He also expressed the concern that if the two types of drilling are separated, one becomes expendable. Larsen shared Berger’s concern. The reason for CONCORD was because riser drilling was new and it satisfied Japan’s requirement to garner support for the proposed riser vessel. Detrick said that the rationale for Pisias’ plan is that CONCORD provided the basis for post-2003 riser drilling. The dividing line is fuzzy, however, since non-riser drilling can be a prerequisite for riser drilling. The dividing line between the technology may also be fuzzy. If the OD-21 ship is not built, riser capability may be desirable with a new ship. Berger also worried that if riser and non-riser science are separated, CONCORD may be seen as a Japanese effort and the other as a non-Japanese effort. Berger suggested that the emphasis should be on non-riser science, but open to all so that the effect would be integrative. Briden asked what the inputs to the conference proposed by Pisias would be. Pisias responded that the inputs would be the Concord report and the white papers on scientific themes so that they are technology driven.

Eldholm worried that the white paper approach was asking too much from a community that had reached its limit. ODP already has an LRP. Eldholm asked what outcome was expected that was not in LRP. Pisias said that it was necessary to define what can be gained from post-2003 drilling. Heinrichs noted that the LRP is a document that gets soft for Phase IV. CONCORD has assisted with the riser component, but a conference in the spring of 1999 is needed to look at elements beyond post-2003. The LRP has a vision, but not a plan. The intention is not to duplicate the LRP, but to extend it.

Second Platform/Ship. Some EXCOM members were concerned that there was not enough time in this scenario to issue an RFP in time to acquire the resources for a second platform. Pisias said that although the Program is on a short fuse, it can done if planning starts now. It may not be a seamless transition, however. In the transition from DSDP to ODP there was a period when drilling ceased. Capital moneys to own a ship will not be requested. The Program may acquire (lease?) one that is commercially available. Heinrichs noted that IODP would be an agency level program, not a space station. Heinrichs added that IODP planning in the US thus far is on target for post-2003.

EXCOM Consensus 98-1-12

By consensus, EXCOM (1) approves the timeline proposed by Nick Pisias, Acting Director of ODP, for an IODP scientific conference in spring 1999 and tasks SCICOM with organizing this conference; and (2) approves the timetable for the design and issuance of an RFP for a second ship/platform for IODP.
Another aspect of the response to the IWG’s letter involves the provision of scientific, technical and financial planning advice for IODP Planning. Humphris referred EXCOM to the diagram in the Agenda Book (Tab 29) outlining how JOIDES Structure can provide this type of input.

**Discussion**

Noting a new **Technical and Operational Planning Committee**, Mével asked about the role of TEDCOM. Humphris replied that TEDCOM is currently working with Science Operator in looking at ODP Phase III developments. She suggested that TEDCOM may not be the right group to tackle IODP technical and operational planning because it lacks enough individuals with the appropriate experience. She suggested that it may be better to set up a new body to address the very focused questions posed by the IWG; this would also provide a mechanism to get industry involved at the beginning of the process. Taylor proposed putting out a call to European and Japanese colleagues in industry to participate in a CONCORD style conference. Beiersdorf recommended that the CONCORD Technical Committee could reconvene and be tasked with answering the questions posed by the IWG. Beiersdorf noted that this group had already identified the problems and challenges of riser drilling. Humphris responded that the mandate is broader than just riser drilling. The committee will need to address the science that can be accomplished within the proposed two ship program. Pisias stated that if the proposed Technical and Operational Planning Committee was a JOIDES Committee, it would have cost implications. Stoffa said that it was important was get people together to establish the process; EXCOM doesn’t need to accept the committee as it is shown on the wiring diagram.

Taylor said that the IWG has pointed at JOIDES to do everything, yet what is envisioned for post-2003 is bigger than ODP. While JOIDES does a good job in science planning, a JOIDES technical and operational planning committee cannot handle this task. He said the Technical and Operational Committee appeared to have the mandate of an entire JOIDES or an entire CONOCO development team. Taylor said he was fundamentally bothered by the whole approach. Heinrichs said the intent of the IWG is not that the committee does everything. The goal is to have a structure that identifies what needs to be done, ensures that these things are being done, and oversees the follow up. Leinen commented that JOIDES has the committee to go about identifying the process, not to do the activities, and EXCOM should trust that they know the limits of their knowledge. Purdy said that the IWG discussed at length how much to direct JOIDES. Instead, the IWG tried to define the key issues to be addressed in their letter and to depend on the greater expertise of EXCOM and JOIDES in determining how to go about it. The program envisioned beyond 2003 is a big $120 million program, and the proposed planning represents the first small step forward. The IWG wanted to come to JOIDES and say, “Can you start this for us?” The issues raised by Taylor are fundamental and Purdy hopes they will be incorporated by JOIDES in this planning effort. Detrick said that EXCOM could recommend a different approach to the IWG, and advocate the use of consultants. Purdy suggested that if EXCOM feels that JOIDES is not up to the task, then this should be submitted as advice so that that IWG can move forward.
Beiersdorf raised the issue of the money required to cover the **meeting costs** of people involved in the proposed planning activities. For this reason, it is necessary to take advantage of the present JOIDES structure. Detrick agreed to raise the issue of the additional financial burden in his response to the IWG.

Beiersdorf noted that JOIDES will also need to design a **new structure** which can be in place two years ahead of drilling to facilitate proper planning. Purdy commented that if debate is healthy, then the structure will metamorphose over the next few years into a suitable framework for IODP. The whole of the structure of IODP will not be the same as ODP.

Detrick noted that he had attended the last IWG meeting and recommended that **formal liaisons** be established. The EXCOM Chair would serve as the liaison to IWG, and the IWG could select a liaison to EXCOM.

Briden suggested that the IWG should look to JOI to provide the **budgetary advice** and costing requested. Detrick noted that this was an iterative process involving definition of the science requirements, followed by the costing.

**EXCOM Consensus 98-1-13**

By consensus, EXCOM (1) approves the proposed general structure presented by the SCICOM Chair for providing short-term scientific and technical advice for IODP planning; (2) recommends the utilization of JOI and appropriate members of the JOIDES advisory structure to assist IWG in determining IODP budgetary and management requirements; and (3) agrees to the establishment of formal liaison relationships between EXCOM and IWG.

10. Future Meetings and Other Business
10.1 Germany (June 24 - 25, 1998)

The next EXCOM meeting will be hosted by DFG in Bonn, Germany. There will be an excursion the day before (Monday 22) possibly along the Rhine Valley or into the countryside surrounding Bonn, depending on the interest of participants. JOI BoG will meet either the afternoon of June 24 th, or the morning of Thursday, June 25 th. ODP Council will meet on Thursday in the morning of June 25. The IWG meeting will follow in the afternoon of the 25 th. Bonn can be reached via airplane to Cologne/Bonn or by train from Frankfurt Airport.

10.2 US

The next US EXCOM meeting will be hosted by the University of Miami. January 25 and 26 were initially suggested, but Nowell pointed out the conflict with the Super Bowl! The meeting dates were subsequently changed to January 13 and 14 in Miami (with JOI BoG meeting either the late afternoon/evening of the 14th or on Friday morning the 15th).
10.3 Other Business

**EXCOM Consensus 98-1-14**

By consensus, EXCOM recognizes that two dedicated contributors to ODP at TAMU are leaving the Program for other career opportunities after excellent service to ODP.

Dr. Tim Francis, Deputy Director of Operations, returned to a research and teaching position in the Department of Oceanography at Texas A & M after 8 years of distinguished leadership and service. Dr. Russ Merrill, Manager of Information Services, is leaving ODP to join Queens College in New York City as Assistant Vice President of Technology after serving the Program for 16 years.

EXCOM wishes to record its appreciation to these colleagues for their sustained contributions to ODP, and its good wishes for success in the future.

**EXCOM Consensus 98-1-15**

By consensus, EXCOM thanks Dave Falvey for his hard work and determined leadership as the Director of ODP which helped ensure the renewal of ODP in Phase 3. EXCOM also recognizes and appreciates his specific contributions in many areas including internationalization, long range budgeting and planning, and public relations. We wish him every success as the Director of the British Geological Survey. We will miss him at EXCOM.

**EXCOM Consensus 98-1-16**

By consensus, EXCOM wishes to record its sincere thanks and appreciation to Ellen Kappel for her dedication, energy and considerable effort in support of the Ocean Drilling Program. The preparation of the "Greatest Hits" compilation for the 1997 New York Port Call was only one of her many contributions made over many years. Recognizing that Ellen herself has been a "great hit" within the global ODP community, we extend our best wishes for her future career.

**EXCOM Motion 98-1-17**

By consensus, EXCOM thanks John Mutter for graciously hosting the January 1998 EXCOM Meeting at Biosphere 2.

Meeting Adjourned
3.0 NSF REPORT
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.

NSF MANAGEMENT REPORT

The FY 1998 Program Plan Budget for ODP is $49,138,998 which represents the initial Plan approved by EXCOM of $47,400,000 and two subsequent actions to carry-forward un-obligated FY 1997 funds to support engineering testing, ice-boat and active heave compensation costs. The approved plan also contains an initial $3,000,000 to support long lead-time costs related to the dry-dock activity planned for August-September of 1999. At present, Program operations have been incrementally funded through late June with NSF's 1998 contribution to Program costs essentially totally obligated. Timely funding for the remainder of the year will be contingent on receipt of remaining international contributions. It is expected that NSF's share of Program funding will be at approximately 63.5% for FY 1998.

NSF has supplied JOI with a target budget of $48,500,000 for preparation of the FY 1999 Program Plan which will be considered by EXCOM at this meeting. Included within this target is a second $3,000,000 for 1999 dry-dock expenses. The FY 1998 and 1999 NSF contribution of $6,000,000 toward refurbishment of the JOIDES Resolution is required to allow extension of the operations contract for the JOIDES Resolution. The status of contract negotiations between Texas A&M and Overseas Drilling Ltd. (ODL) for extension of the operations contract during phase III (1999-2003) will be covered in the Science Operator's report at this meeting. Any additional expenses incurred during the dry-dock will need to be supported from the base Program funds. Given the uncertainties in international partner participation discussed below, the NSF contribution for FY 1999 could range from a low of 62% to a high of 68% of Program costs -- if the existing target budget is to be maintained at $48,500,000.

There has been little change in the status of international commitments to participate in Phase III since the January EXCOM meeting in Arizona. Neither France nor the
European Science Foundation Consortium have formally committed to continued participation at full membership level. NSF staff met with representatives of both partners in Strasbourg and Paris in March to resolve this continuing and complicating problem. French membership in ODP is to be shifted from IFREMER to CNRS with the maximum financial contribution level set at $2,000,000 - but dependent on the level of French participation which is to be negotiated. With respect to the ESF Consortium, Italy has committed to continued participation for Phase III but with a reduced consortium subscription. It is expected that the ESF Consortium status will be further clarified by the time of the EXCOM meeting.

On April 13 Dr. Wang of the Marine High-Technology Bureau of the People's Republic of China signed a Memorandum of Understanding (MOU) with NSF to become the first Associate member of the Ocean Drilling Program. The MOU is effective through the year 2000 and supports a one-sixth membership in the ODP. Chinese scientists will have the right to attend all JOIDES meetings and will have formal representation on the site survey panel and Scientific Steering and Evaluation Panel for the Interior. Approximately two scientists per year will participate in ODP cruises. Finally, as noted in the minutes of the January EXCOM meeting, the return of the PACRIM consortium to full membership is still not possible. At present the Consortium is participating at an eleven-twelfths level.

It is expected that the issue of less-than-full membership level and participation in both JOIDES planning and scientific operations will be matters for discussion at both the EXCOM and ODP Council meetings in Bonn. These issues were last discussed at the EXCOM/Council meetings in Edinburgh in developing a plan for participation of new candidate/associate members in the ODP. However, the problem of reduced participation by traditional ODP partners has not been formally addressed.

There have been no formal activities of the International Working Group for the Integrated Ocean Drilling Program (IWG/IODP) since the January EXCOM meeting. It is expected that JOI and JOIDES will provide a report on the status of science and technology planning for the IODP, and JOI and TAMU-ODP will present the status of planning for cooperative technology development between ODP and JAMSTEC during phase III of the present program.

Based on a request from JOI, NSF is evaluating proposed changes to the prime contract with JOI for management and operations of the ODP. The requested changes dominantly reflect administrative updating of contract wording to reflect Program organizational changes since 1993 when the contract was signed.
CHINA

ODP Press Release/30 April 1998

CHINA JOINS THE INTERNATIONAL OCEAN DRILLING PROGRAM

The People's Republic of China is the first nation to join the Ocean Drilling Program (ODP) as an Associate Member. ODP is an international geosciences program which enables scientists and research institutions to explore the evolution and structure of Earth. The Memorandum of Understanding between the US National Science Foundation (NSF) and the Chinese State Science and Technology Commission was completed mid-April.

"We're extremely pleased to have the People's Republic of China join ODP as the first Associate Member in response to our efforts to include the full global community of Earth scientists," said Don Heinrichs, Division of Ocean Sciences, National Science Foundation, "We look forward to the new viewpoints, enthusiasm and expertise Chinese scientists will bring to ODP which will complement our existing capabilities."

The centerpiece of the ODP is the drill ship, JOIDES Resolution, which measures 143 meters long and 21 meters wide with a derrick that towers 61.5 meters above the water line. A computer-controlled positioning system maintains the ship over each drill site. The ship drills and retrieves sediment, rock samples and geophysical data from the layers beneath the seafloor.

Next year, ODP has planned an expedition of particular interest to the People's Republic of China. The expedition, referred to as Leg 184, will examine the East Asian monsoon and its connection to climate change. By drilling in the South China Sea, scientists will be able to document the evolutionary development and variability of the East Asian monsoon. Knowledge of this monsoon system is important for understanding global climate change and its influences on the history of the human species and ancient cultures. A climate change expert, Dr. Pinxian Wang from the State Education Commission, Laboratory of Marine Geology, Tongji University has been named co-chief. Leg 184 will take place 13 February - 11 April, 1999 and end with a port call in Hong Kong.
The annual budget for ODP is approximately $45 million US with the annual fee for full members at approximately $2.9 million US. China's participation as an Associate Member (1/6 level) will be approximately $490,000 US annually. Benefits for an Associate Membership include: participation of two scientists per year on ODP expeditions; invitations extended for co-chiefs proportionate to their contribution level; full voting membership on two panels with the right to have non-voting observers at all JOIDES meetings; and access to engineering plans, data, research results, publications and other information.

The Ocean Drilling Program is funded principally by the National Science Foundation, with substantial contributions from its international partners. These include the Federal Republic of Germany, France, Japan, the United Kingdom, the Australia/Canada/Chinese Taipei/Korea Consortium for Ocean Drilling, the European Science Foundation Consortium for Ocean Drilling (Belgium, Denmark, Finland, Iceland, Italy, The Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, and Turkey) and now, the People's Republic of China. The program is managed by Joint Oceanographic Institutions, a consortium of 10 US institutions, with Texas A&M University responsible for science operations. Lamont-Doherty Earth Observatory is the operator for downhole logging.

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Dr. Shen Jianzhong, who works for Dr. Zhixiong, will act as the point person for the ODP China office.
OCEAN DRILLING PROGRAM
MEMO

7 April 1998

TO: Susan, Jeff, Nick
FROM: Bruce Malfait, PD/ODP
SUBJECT: ODP membership of the People’s Republic of China

As noted in the attached letter, NSF has now signed the MOU (for 1998-2000) with the People’s Republic of China as our first associate member (at a 1/6 level) in ODP. The MOU was express-mailed today to Dr. Wang at the Marine High Technology Bureau for his signature on behalf of the PRC.

We have all talked earlier about their participation, but to summarize:

Based on the 1/6 th membership level, the following reduced participation privileges are identified in the MOU:

- Participation of 2 scientists per year on cruises
- Co-chief scientists invitations in proportion to their contribution level
- Full voting membership on only SREP-Interior and site survey panels, but with the right to have non-voting observers at all JOIDES meetings.
- Access to engineering plans, data and other information developed after the effective date of their membership

Additionally, we have agreed that there will be “no national symbols displayed at ODP Council meetings, or as part of the official or NSF sponsored ODP publications or exhibitions.”

Until we hear otherwise, we have agreed to send all ODP correspondence to Dr. Wang. Most of our e-mail communication has been via Dr. Shen Jianzhong (see attached) who works for Dr. Wang. The PRC will begin forming their internal ODP country scientific structure, but I have no idea how long this will take.
Action items:

**JOI** Dr. Wang needs to be added to the list of ODP Council members and sent the travel/hotel information already e-mailed to other Council members for the June meeting. Nick, can you handle this?

**JOIDES** Susan, Dr. Wang should be contacted and asked for PRC reps to SSEP and SSP and informed of next meeting dates. Hopefully there will be time to make the Edinburgh meetings. Would be useful to provide as much info as possible (meeting schedules, etc), particularly for EXCOM and IWG.

**TAMU** Can proceed as appropriate in inviting scientific and co-chief representatives, etc.

**NSF** As we discussed during State Department review, DOD raised technology transfer concerns that will require securing DP room from scientific party on cruises involving PRC scientists and not divulging techniques or details of re-entry or positioning equipment. DOD/Navy personnel will also be briefing TAMU operators on security concerns, etc. I am working with Jeff and Navy to set up briefing date in College Station.

I think that's all for now.
April 6, 1998

Dr. Wang Zhixiong  
Marine High Technology Bureau  
State Science and Technology Commission  
15 B, Fuxing Road  
Beijing 100862  
China  

Dear Dr. Wang:

It is with great pleasure that I sign the attached Memorandum of Understanding between the National Science Foundation and the Marine High Technology Bureau for participation of the People's Republic of China in the Ocean Drilling Program. The Program has benefited significantly from the intellectual and financial resources provided by our international members and we are happy that scientists from the People's Republic will now have the opportunity to participate directly in this unique partnership. NSF is proud to play a leading role in this Program, but we are equally proud of the efforts such as yours which serve to recognize both the quality and importance of the ODP.

I wish you both smooth sailing and good drilling as our newest partner.

Sincerely,

Neal Lane  
Director

Enclosures
ITALY

Italy will stay in the Program as part of the ECOD consortium, but will reduce their membership contribution from 25 to 20%.

IRELAND

Ireland has expressed interest in joining the ECOD group. The EXCOM Chair has invited Dr. Peadar McArdle, Director of the Marine Geology Unit, Geological Survey of Ireland, and Dr. Raymond Keary, Senior Geologist, to attend this EXCOM meeting to meet informally with EXCOM members and official liaisons to discuss Ireland’s potential future participation in ODP.
COUNTRY REPORTS

4.0 COUNTRY REPORTS

4.1 Australia-Canada-Chinese Taipei-Korea (Feary)
4.2 ECOD (Eldholm)
4.3 France (Mevel)
4.4 Germany (Beiersdorf)
4.5 Japan (Taira)
4.6 PRC (The People's Republic of China) (Wang)
4.7 UK (Briden)
4.8 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 ODP CONSORTIUM (PACRIM)

AUSTRALIAN REPORT:

Australian ODP activities over the past 6 months have focussed on the move of the AusODP Secretariat from James Cook University to the University of Sydney and organisation of the pending portcalls, but these have been overshadowed by the financial turmoil arising from the Asian economic crisis and consequent plunge in the $AUD to $US exchange rate. This has had a profound effect on the cost of Australia's PacRim member contribution, and it now appears that the FY98 payment will cost some $A200,000 more than was requested in the grant application to the Australian Research Committee.

Secretariat

Secretariat activities have been dominated (in addition to set up/staff appointments) by planning for the pending JOIDES Resolution portcalls in Darwin (8-12 June), Sydney (11-15 August), and Fremantle (8-12 December and 11-15 February). Most activity has been directed towards the Sydney portcall, as this will be the primary focus of publicity to
promote the program to government and media. The Fremantle portcall in December will be used to publicise the program to industry.

Proposals / Drilling Legs
Scientific activities have been directed towards planning for forthcoming drilling legs (181, 182, and 188) and providing support for proposals (South Tasman Rise paleoceanography; site surveys for Marion Plateau sea-level; developing Northwest Shelf proposal).

Phase IV Planning
Australia has yet to seriously begin planning for Phase IV. The AusODP Council will meet in June, with ensuring the continued support of the Australian funding base, to 2003 and beyond, as the major agenda item. In addition, Tony Crawford, Tom Loutit (Co-Chair), and Eric Maidla contributed to the CONCORD meeting in Tokyo.

CANADIAN REPORT:

Canadian Council Meeting
The Canadian Council for ODP met at the Geological Association of Canada/Canadian Geophysical Union's Annual meeting in Quebec City on May 19. With the renewal of the Canadian ODP proposal all is running smoothly for ODP in Canada. New funding commences 1 April 1999 and is committed until 31 March 2003. Funding continues at the 1/3 level with the major contribution from NSERC and the rest from the Geological Survey of Canada; the GSC remains the signing authority with respect to NSF and other members of the Consortium. Funding was also approved for a Canadian ODP Secretariat until 2003.

Larry Mayer has come to the end of his term as Chair of the Canadian Council for ODP and will now rotate off. The Nominations Committee made up of the Chief Scientist of the Geological Survey (Richard Grieve), the Chair of the Canadian Geoscience Council (Bob McNutt), Steve Harding from Husky Oil, and the Group Chair of the NSERC Earth Science Panels (Larry Mayer) will convene to choose a replacement.

The Secretariat is also scheduled for rotation. With the agreement of NSERC it was decided to delay the rotation of the secretariat so that it will be in sync with the funding cycle. In mid-June NSERC will call for letters of interest due mid August; full proposals will be submitted by 15 November with a decision to be made by January 1999. The new secretariat will start on 1 April 1999.

Phase IV Planning
Canadians are beginning to play an active role in the planning process for Phase IV drilling. Mike Enachescu (Husky Oil), Earl Davis, Steve Scott and Kathy Gillis attended the CONCORD meeting in Tokyo. Larry Mayer is on the Executive of the Planning Committee for the Conference on Scientific Ocean Drilling beyond 2003. Robin Riddihough attended and will continue to attend IWG meetings and a letter from GSC
ADM Marc Denis Everell to Mike Purdy expressing Canada's interest in taking part in the planning process for IODP is enroute.

CHINESE TAIPEI ODP CONSORTIUM:

Activities - December to May, 1998

Dr. Char-Shine Liu of Institute of Oceanography of National Taiwan University (IONTU) attended the Pollution Prevention and Safety Panel Meeting held in Denver, USA on Dec. 4, 1998.

The Chinese Taipei ODP Consortium Chairman, Prof. Ju-chin Chen of the Institute of Oceanography of National Taiwan University (IONTU) attended the SCICOM Meeting held in Denver, USA on March 18, 1998.

The Chinese Taipei ODP Consortium Newsletter No.3 was published on April 10, 1998.

The Taiwanese Letter of Intent for 'Understanding the initiation of a continental arc-backarc system and its interaction with Taiwan arc-continent collision by drilling the Southermost Part of Okinawa Trough (SPOT)' was submitted at the March SCICOM meeting.

KOREAN REPORT:

Korean ODP activities over the last six months have been overshadowed by the economic crisis, which has resulted in severe budget cuts, and a restructuring of all research institutes supported by the government, etc.

The KODP Science Committee (KODP-SCICOM) was held on the 20th of March, and discussed the outstanding issues of advertizing and the nomination of shipboard scientists:

I. Advertizing

At the last KODP-SCICOM meeting, we decided that KODP needs to prepare some kind of advertising materials because most people in universities and industries do not know that they could use ODP data and samples free of charge. Therefore, KIGAM was assigned to make a brochure.

II. Nominating Shipboard Scientists

We have experienced that most Korean scientists applications to be shipboard scientists have been rejected, probably because of their major field. Therefore, KODP should use a different type of application form to evaluate candidates shipboard scientist nominations.
The new application form should contain more specific major fields and the purpose of research. This new form will be made available in June.

III. KODP Funding

It took a long, long time to persuade government personnel to release the (1/12 member) funding for FY98. However, it still not clear whether KODP can survive beyond FY98. The Planning and Budget Committee (it is a new SUPER organization under the President of Korea) will decide around the end of June. We have no choice but to wait.

IV. KODP member change

Dr. Pil-Jong Kang, who was the president of KIGAM, stepped down as a result of the government restructuring. He will continue to work for KIGAM as a researcher. Accordingly, the new president of KIGAM will be the chairperson of KODP. His name is Dr. Kyung-Won Lee and email address is kwlee@rock25t.kigam.re.kr. He is a mining engineer and got his degree in German.

4.2 ECOD

MANAGEMENT MATTERS

The present three-year period of all elected ECOD representatives expires July 1, 1998. The ECOD Scientific Committee (ESCO) has elected new representatives to all JOIDES committees. Dr. Nils Holm, University of Stockholm, Sweden will take over as ESCO Chair and SCICOM representative, and the ESCO Secretariat moves to Stockholm for the next three-years. The ECOD Management Committee (EMCO) meets in Turku, Finland on June 8 and will chose the new EXCOM representative.

Because of the upcoming EMCO meeting developments will be reported orally in Bonn.

1. Status of Phase III

The 50% contribution from the non-Nordic countries towards the membership fee is still not settled. Italy has now approved a 20% participation, and Portugal will come in with 3%. No news from Turkey, which is in debt to ECOD, and has to pay up before continuing as a member. We hope, and expect, that the other non-Nordic members will increase their contributions and provide the remaining few percents.

2. IODP planning

ESCO has in a letter to Dr. R.W. Corell, National Science Foundation, of April 23, 1998 formally expressed its interest in contributing to the analysis, planning and potential establishment of IODP. Furthermore, it has been requested that ECOD representatives are invited to future meetings of IWG-IODP.
SCIENTIFIC MATTERS

1. Meetings
(a) The 26th ESCO Meeting was held in Milan, Italy 13 March 1998. The meeting was followed by a field trip focusing on the Liassic to Miocene deposits and Quaternary cover of Colle di Sogno located near Bergamo.

(b) Second European ODP Conference, Edinburgh, UK; 18-22 September, 1998. The ESCO Secretariat is co-ordinating the ECOD participation. Registration forms have been distributed to the entire ESCO community.

(c) ECOD scientists will actively participate in the International Conference on Paleoceanography (ICP VI), 23-28 August, 1998.

(d) J. Kenter, ESCO delegate for Holland, will host the next ECOD Workshop in Holland 28 April-2 May, 1999. The theme is "Non-riser drilling". The meeting format will be similar to that of the past Sundvollen (Norway) workshop including a special workshop/course for students interested in marine geology and ODP.

(e) The next ESCO meeting is in Edinburgh prior to the 2nd ODP Euroforum, 18-22 September, 1998.

2. ODP Legs
(a) ECOD scientists sailing in 1998.
Leg 177: Andersson C. (Norway), Marino M. (Italy), Flores J. (Spain)
Leg 178: Sjunneskog J. (Sweden), Maldonado A. (Spain), Iorio M. (Italy)

(b) ECOD scientists invited to sail in 1998 (as of April 1998).
Leg 180: Brooks K. (Denmark), Gerbaudo S. (Italy)
Leg 181: Gradstein F. (Norway), Di Stefano A. (Italy)
Leg 182: Surlyk F. (Denmark), Andres M. (Switzerland)
Leg 183: Planke S. (Norway), Weis D. (Belgium)

(c) Co-Chief
Camerlenghi A. (Italy) Leg 178

(d) Temporary Technicians
Leg 176: Ofteigsson M. (Iceland)
Leg 178: Suhonen J. (Finland)
Numerous ECOD students applied for Temporary Technical Support Position for FY99 legs.

(e) Observer
Leg 177: Kleiven H. (Norway)
3 Other Initiatives

(a) Follow-up of the ECOD-organized International Conference "Mediterranean Paleoceanography - Neogene to Present". Two special issues will be published: one, focussing on the Messinian, as Memories of the Geological Society of Italy; the other, focussing on sapropels, in Palaeogeography, Palaeoclimatology, Palaeoecology. The editors have already received several manuscripts, the deadline for submission is 31 May, 1998.

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

Since the last EXCOM meeting in January there were a few events with regard to ODP which happened in Germany. The German Annual ODP Colloquium took place on 4-6 March, 1998 in Freiburg, hosted by the Geologisches Institut of the University of Freiburg and attended by 200 scientists from Germany and abroad. Once again the German ODP community showed a strong interest in ODP Phase III, and looked into planning of ocean drilling beyond by agreeing to establish a working group with the objective of integrating plans for scientific drilling onshore and offshore drilling in the eastern Mediterranean region. On June 4, 1998 there will be a first discussion meeting with continental (KTB/ICDP) and ocean drilling scientists in order to formulate the tasks of the working group and its membership. The long range goal of this will be drilling transects to solve questions which fall under the ODP Long Range Plan and IODP.

Subsequent to the ODP Colloquium in Freiburg an ad-hoc meeting of members of the European ocean drilling community was held following an invitation by DFG and initiated by a meeting of executives of European funding agencies involved in ODP. The participants of the ad-hoc working group discussed possibilities of actions aiming at securing Europes role in ocean drilling (details will be given at the EXCOM meeting in Bonn).

The German R/V SONNE is working with the J.R. at the Ninety East Ridge by providing seismic assistance to the borehole seismometer testing and "seismic experiment by the J.R. The work with SONNE is carried out by BGR and GEOMAR, and sponsored by BMBF.

A final list of 40 German participants to the European Ocean Drilling Forum to be held 19-22 September, 1998 in Edinburgh has been established. Among the German
participants will be speakers, poster presenters, ODP panel members and representatives from funding agencies.

The DFG Geokommission once again has made it clear that ODP/IODP planning must take place very close to ICDP planning in order to create synergies for the solution of "world class geological problems".

* Note: The Offset seismic experiment involving scientists on board the JR and R.V. Sonne was cancelled. Details will be available from the ODP/TAMU liaison, Jeff Fox.

4.5 JAPAN

ODP National Committee
April 1, 1998, the start of the Japanese fiscal year, marked the initiation of ODP Phase III in Japan. In accordance with this new step, we started to nominate new members of the ODP Japan National Committee (32 members) and the Science Planning Committee (25 members). Dr. Keisuke Taira, the director of ORI, is the chair of the National Committee and Dr. Asahiko Taira is the chair of Science Planning Committee. Both committees will meet in June before the EXCOM at Bonn in order to discuss the overall plan for ODP Phase III and the program beyond 2003.

IODP Committee
Regarding IODP activity, JAMSTEC, STA, ORI and Monbusho have formed a national committee which is chaired by Dr. Ikuo Kushiro of Okayama University. The IODP committee met on April 14th and discussed JAMSTEC technological development, necessary actions in response to March SCICOM decisions, and to plan for the coordination of international activities. The committee created a subcommittee, chaired by Dr. Kensaku Tamaki, which is responsible for formulating technological and operational recommendations. The committee also accepted the recommendation by SCICOM to nominate Dr. A. Taira for co-chair of the IODP science conference in 1999.

New Budget
ORI was successful in receiving a supplementary budget in 1998 for site survey equipment enhancement, including a new multi-narrow echo-sounding system.

Site Survey
Site survey activity in this year includes Hakuho-Maru KH98-1 cruise to the Ontong Java Plateau, and a Tansei-Maru KT98-5 cruise to the Japan Trench (support for Leg 186 science).

The KH98-1 cruise Leg 1 started on January 16 from Tokyo. During the transit to the Lyra Basin, we deployed two OBEM and one broad band OBS. We then conducted a three day survey of the seafloor magnetic anomaly of the Lyra Basin in order to test a ridge-
plume interaction model for OJP formation. Following the magnetic survey, we deployed 16 OBSs to make a cross array on the summit of the plateau, and five additional ones to the south. This OBS array was designed to investigate the crust and upper mantle structure of OJP. After OBS deployment, we launched the IZANAGI sidescan sonar which was towed with a 24 channel streamer cable and a 4-liter air-gun. The western end of the Malaita accretionary prism was mapped with the above towing system in order to study the nature of fault propagation and the initial process of OJP crust off-scraping. A triangular network of OBSs was laid for a study of seismicity in relation to the propagation of the thrust front within the OJP crust.

Then, on the way to Cairns, six OBSs were deployed to the south of the Bougainville strait in order to determine the epicenters of subduction related earthquakes expected to occur at the depth up to 500km.

After the port-call in Cairns the eastern salient of OJP was visited and a 24-channel streamer cable was deployed with one 4-liter chamber air-gun. This MCS survey covered the northern part of the Stewart basin and the northern high of the eastern salient. Then we made a short 24-channel MCS (with three 1500C guns) survey and sonobuoy refraction survey in the Nauru basin where a previous RV Jean Charcot line suggests a window to the oceanic basement within mid-Cretaceous intra-plate volcanic province.

We commenced a 48 channel MCS line to the crossing point with Charcot Line (and line 400 after) with mostly three Bolt 1500C guns. The line included sonobuoy refraction surveys at every 20 miles. The western end of line 400 covers over the OBS array laid during Leg 1. We then made a cross line with the same reflection survey configuration. Sonobuoy refraction survey was done at selected points. After completing the OBS cross line shooting, we made a tie line survey connecting DSDP Site 289. This completed the MCS survey of this cruise and was followed by recovery of the OBS instruments. Sixteen out of 17 retrieval attempts were successful.

Continuos proton magnetometer, gravity measurement, 3.5 kHz echosounding and Sea Beam bathymetric survey were also conducted.

Seven JOI/USSAC-supported American scientists and two scientists supported by Norway participated in cruise KH98. The KH98-1 cruise also bears a close relationship with RV Maurice Ewing cruise EW95-11, which was conducted in 1995.

The data obtained during this cruise will be used for ODP site proposals.
4.6 THE PEOPLE’S REPUBLIC OF CHINA

The People’s Republic of China will begin the cooperation with Ocean Drilling Program during the period from December 1, 1997 to September 31, 2003 with the signature of the Memorandum of Understanding between the National Science Foundation of the United States of American and Marine High Technology Bureau of the National Science and Technology Commission (now renamed as the Ministry of Science and Technology) of the People’s Republic of China on the participation of the People’s Republic of China in the Ocean Drilling Program as Associate Member, the first in ODP history, in April, 1998.

The geoscience community in China has been greatly interested in ODP and noticed the great scientific achievements in earth sciences even before the formal participation of the People’s Republic of China. Some scientists from the People’s Republic of China have had opportunities to be involved in ODP shipboard work and scientific research during their studies or work outside of China. The Chinese earth science community has convened several workshops on the scientific themes of ODP, invited several experts involving in ODP to introduce the Ocean Drilling Program, and published a series of articles about the general and scientific information of ODP since 1994. In early 1995, several prominent scientists, led by Guangzhi Tu, the Member of the Earth Science Department of Chinese Academy of Sciences, submitted a report to Jian Song, the State Counselor, which urged our Government to participate in the Ocean Drilling Program. The State Science and Technology Commission got the authorization to be responsible for the issues of the participation of the People’s Republic of China in ODP. After coordination with the National Science Foundation of the United States, The People’s Republic of China decided to participate ODP as an associate member (1/6 full member).

No drilling activities have even been implemented in the territory of the People’s Republic of China since the People’s Republic of China have been absent from ODP, but this situation will be changed with the participation of China in ODP. Several project proposals have been drafted by the Chinese scientists, and submitted to ODP in 1995. The proposal on the history of the East Asian monsoon and its connection to global climate change, submitted by a Chinese scientist group, has been accepted by ODP and scheduled as Leg 184. Leg 184 will take place from 13 February-11 April 1999, and its aim is to document the evolutionary development and variability of the East Asian monsoon by drilling in the South China Sea. Professor Pingxian Wang, Tongji University, has been named a co-chief scientist.

In China, several organizations, such as the former Ministry of Geology and Mineral Resources (now the Ministry of Land and Natural Resources), Chinese Academy of Sciences, National Oceanic Administration, China Seismic Bureau and National Petroleum Corporations and Ministry of Education, have a large number of geoscience scientists engaged in scientific studies of earth sciences in different academic institutions. There are also more than 100 oceanic research institutions in PRC. In order to organize and coordinate the Chinese scientists to vigorously participate in the ODP activities, and
work with the scientists from other countries, a coordination system for ODP was established in China, which includes Executive Committee and Science Committee. The Executive Committee will consist of the representatives from different governmental departments, and the Science Committee will consist of the scientists from different academic organizations and institutions. We think that the involvement of the Chinese scientists will surely bring new viewpoints, enthusiasm and expertise to ODP.

4.7 UK

UK Report to EXCOM, June 1998

1. The new UK ODP Committee, the establishment of which was announced at last EXCOM, has met for the first time, and recommended grants for projects by John Parkes (microbiology) and Harry Elderfield (Geochemistry and fluidflow, Leg 168). The UKODP website is at http://www.nerc.ac.uk/science/themprog.htm. It includes up to date information on UKODP research and announcement of opportunity.

2. Applications for participation in the shipboard parties is still buoyant. Peter Barker was co-chief on leg 179.

3. With effect from 1 October 1998, Alistair Robertson will succeed Julian Pearce as the UK member of SCICOM. The UK has recently hosted both the Scientific Evaluation Panels and will also be host to the SCICOM/OPCOM meeting in Durham this August.

4. Future UK Commitment to Scientific Ocean Drilling.
The most important outcome of the first meeting of the new UK ODP Committee was the setting up of a working group to explore further the UK stance on future scientific ocean drillings. The task of the working group was to inform NERC of the key scientific opportunities and priorities for geoscience that might be addressed by a new programme in the 21st Century. The group used the CONCORD paper as its starting point, and discussed in broad terms the geoscience areas that might benefit from new deep drilling after ODP. The working group put forward two proposals which it believes integrate the science needs of the majority of the UK community i.e. university, institute and industry. These are:

i. a passive margin deep hole, which links with the resource component of the most recent NERC strategy document

ii. an environmental processes deep hole, which links to many of the environmental components of the Strategy Document.
The Working Party concluded that the existing UK science community would probably continue to have as much use for conventional non-riser drilling of the type carried out at present. It also noted interest in high volume, short-coring facilities, but deferred more comprehensive comment pending the international conference planned for next year.

Given the present rapid progress in offshore equipment technology within science and industry, the group anticipates that there will be a variety of techniques that can be adapted for use in scientific core collection, post 2003. The new generation of deep-water drilling vessels that are being build incorporate many of the facilities that would be required for deep-water/deep penetration scientific drilling. All of these developments are oil industry-led and relate to the collection of data in hydrocarbon-prospective areas. Hence, neither the present ODP vessel, nor the future Japanese vessel are likely to be the only platforms or technologies available for Ocean Drilling beyond 2003. The working party report was considered by the NERC Earth Science and Technology Board on 21 May 1998. The science-driven approach of the working party was commended and, in the light of the report, it was concluded that the US/Japan proposals that are developing should not be seen as the only option for ocean drilling after 2003.

Julian Pearce reported briefly on the NERC deliberations at the third European Conference on Marine Science and Technology in Lisbon at the end of May. The session on future ocean drilling was strongly bureaucratic in its lead rather than scientifically led, but nevertheless, the potential positive role of the European Commission in promoting these endeavours was to be welcomed.

5. The second European Ocean Drilling Forum will be held in Edinburgh 19-22 September 1998. It would be helpful if, by then, the other European country partners active in ocean drilling could develop their scientific priorities to set alongside those outlined by the UK working party. Julian Pearce will be contacting SCICOM colleagues to achieve this.

4.8 USA

U.S. COUNTRY REPORT (PART I)

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 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 homepage (http://www.nsf.gov).

Although the NSF budget for FY 1998 was approved in late October, details at the Division and Program levels were not available until early March. Overall, the Division of Ocean Sciences received an increase of approximately $4M, but this increase was totally absorbed by an increase of approximately $5M in required OCE participation in Foundation and Directorate programs. As a result almost all OCE Programs suffered a reduction in available funds from FY 1997 levels.

The Ocean Drilling Program increased by only $.85M, rather than the $1.5M in the original FY 1998 request. As a result, a significant portion of the $3M required for drydock expenses has been absorbed from funds which otherwise would have been available to support U.S. ODP science programs. The U.S. Science Support Program funded through JOI (and described in the following report) has increased slightly from 1997 levels. The major reduction in U.S. scientist support (approximately 25%) has occurred in the unsolicited proposal/grants portion of the Program which provides funding for field-site survey activities and development of new instrumentation and experiments.

In 1998 NSF ODP Grants activity is supporting 8 field programs including: 1) A detailed mapping and sampling program completed in April in the vicinity of site 735B in the Indian Ocean under the direction of Henry Dick (Woods Hole) with Canadian and British colleagues. Although plagued by instrument problems, the cruise completed many of its objectives; 2) A near bottom gravity study of sites drilled in Middle Valley off the Washington coast (Marc Zumberge - Scripps Institution) to attempt to map the sub-seafloor distribution of buried sulfide deposits; 3) A high resolution seismic study along the New Jersey transect (Greg Mountain-LDEO) to tie recent coastal plain drilling into ODP shelf sites; 4) 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; 5) Initiation of experiments at Oregon margin CORK sites to study the formation of gas hydrates (Carson-Lehigh and Kastner-Scripps); 6) A cooperative submersible diving program using the Shinkai 6500 on the mid-Atlantic ridge in the North Atlantic (Peter Keleman - Woods Hole); and 7) In January, all instruments were successfully deployed at the OSN-1 site near the island of Hawaii, including buried and surface ocean bottom seismometers and a borehole seismometer. The instruments are scheduled to be recovered in early June and should provide critical information on the optimal plan for extending global seismograph coverage to the oceans. The project is under the overall direction of Ralph Stephen (Woods Hole) and John Orcutt (Scripps Institution).

For 1999 the NSF ODP program has committed to funding a 3-D multi-channel seismic program along the Nankai margin (Nathan Bangs and Tom Shipley - Univ. Texas, Greg Moore-U. Hawaii) which will be accompanied by ocean bottom seismometer studies
conducted by Japanese scientists, and a detailed sedimentation and sea level study of the New Zealand margin (Craig Fulthorpe - Univ. Texas). Additional field programs and experiments for 1999 are presently under evaluation. Continued work at long-term observatory sites in Middle Valley are also anticipated.

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 1999 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 this year. Further information about this initiative can be obtained from Dr. Brian Taylor (University of Hawaii) who presently chairs the MARGINS Steering Committee. The Margins Program is an important component in NSF's planning for future drilling.

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 this meeting of the Executive Committee.

U.S. COUNTRY REPORT (PART II)
JOI/USSSP ACTIVITIES JANUARY TO JUNE, 1998

JOI Personnel Changes

Director, ODP  At the SCICOM meeting in August 1997, 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 began in September and Nicklas Pisias was named the interim Director as of January 1, 1998. Pisias’s tenure will end on June 30th because Kathryn Moran, formerly of the Geological Survey of Canada, was named the new Director in early May. Moran will become a JOI employee on June 19, 1998 and, with Pisias, will attend the June EXCOM meeting as one of her first actions as Director. Moran will be named a Principal
Investigator, along with Co-PI John Farrell, on the US Science Support Program Cooperative Agreement with NSF.

**Associate Director, ODP; Director, USSSP**  Ellen Kappel, formerly the Associate Director, ODP, and Director, U.S. Science Support Program, is half-way through a year-long professional development sabbatical that began on January 1, 1998. Ellen is working on USSSP-related activities such as the new educational CD-ROM tentatively titled "Gateways to Glaciation" (see "The Second Educational CD-ROM", below). Effective January 1, John Farrell was promoted to the positions of Associate Director, ODP, and Director, USSSP.

**Assistant Director, ODP**  Frank Rack was hired by JOI as the ODP Assistant Program Director on April 14, 1998 with a start date of May 4. Rack (TAMU PhD, 1992), comes to JOI from New Brunswick, Canada, where he worked with Larry Mayer as a Research Associate in the Department of Geodesy and Geomatics Engineering at the University of New Brunswick. Rack was formerly a Staff Scientist at ODP/TAMU and has sailed on seven ODP legs.

**USSSP Contract Year 14**  The final version of the Year 14 Program Plan for the JOI/USSSP was submitted to NSF on February 13, 1998 for the contract year beginning March 1, 1998. Later in the month, the plan was approved and budgeted at $5.62 M. A "close-out" report for Year 13 was submitted to NSF in early June.

**COMPOST-II**  The 1997 report by the U.S. Committee on Post-2003 Scientific Ocean Drilling, titled, "A New Vision for Scientific Ocean Drilling" has been mailed to over 1000 scientists and other individuals in the US and abroad. The report is available online (www.joi-odp.org).

**Spring 1999 International Conference**  Notices regarding this conference and calling for one-page statements of interest that describe a scientific objective, its importance, and the necessity for drilling, have been sent to over 700 people in the U.S. This conference has been advertised in Nature, AGU's Eos, GSA Today, Geotimes, AAPG Explorer, the newsletter of the Society of Economic Geologists, and the RIDGE newsletter. This conference will focus on, although not exclusively, the scientific goals of non-riser drilling and will complement the CONCORD conference held July 22-25, 1997, in Tokyo, Japan.

**Promotional Poster**  To encourage greater participation in the ODP, a "Research Opportunities" poster was designed and printed and will be available at EXCOM. It is being included as an attachment to the COMPOST II mailing distribution. Additional copies are available from the JOI Office. The poster text is in English but it is not written or designed to be nation-specific. In other words, it can be used by any partner. Electronic copies are available from JOI for those wishing to customize it.

**The Second Educational CD-ROM**  Progress is continuing, primarily under the auspices of Ellen Kappel, on the design and implementation of the second ODP-related educational CD-ROM, tentatively titled "Gateways to Glaciation". It will focus on the
closure of the Isthmus of Panama during the Miocene and Pliocene and on the paleontological, paleoclimatic, and other implications, such as the Great Vertebrate Exchange between South and North America and the possible link to the initiation of significant Northern Hemisphere glaciation during the Pliocene.

**USSAC membership rotation**

USSAC members rotating off on October 1, 1998 include: Terry Plank, Bill Curry, Jamie Austin, Mary (Missy) Feeley, and Carolyn Mutter. New members rotating on at that time include Tim Byrne, Nick Christie-Blick, Mike Underwood, and Gregor Eberli.

**Educational Poster**

The May 1998 issue of "The Science Teacher", the flagship journal (distribution of 27,000 in US and Canada) of the US National Science Teachers Association, contains an article by Len Sharp titled, "A blast from the past", and a large pull-out poster designed by JOI personnel and others. The article and the poster (financially supported by USSSP) focus on the K/T impact event with a strong tie-in to the science from Leg 171B, which recovered beautifully preserved K/T boundary sequences. On the back of the poster is a set of high-school level educational activities, a blurb about the ODP, suggested reading/media lists, suggested web sites, a paean to the CD-ROM "Mountains to Monsoons", and other items.

**Planning Retreat**

A subset of the US Science Advisory Committee and other US scientific leaders from the ocean sciences and marine geology and geophysics communities will meet on July 21-22, in State College, Pennsylvania, hosted by USSAC Chair Michael Arthur, to hold a retreat that will focus on developing a detailed plan—emphasizing the US role—for a post-2003 scientific ocean drilling program.

**Site Augmentation Proposals Funded**

- Paul Mann (Institute for Geophysics, University of Texas at Austin): "U.S. participation in Japanese KH98-1 (Leg 1) cruise to the North Solomon Trench and Ontong Java Plateau: ODP site survey in support of collisional and fluid processes"

**Workshop Proposals Funded**

- Morris (Washington University, Saint Louis): Co-sponsor "Subduction Factory". June 7-9, 1998 La Jolla, California.


**JOI/USSAC Ocean Drilling Fellowship Program**

A fellowship was awarded in March 1998 to Michael Wara, University of California, Santa Cruz for "Boron isotopes in foraminifera as tracers of ocean pH" (one year shorebased).
ODP "Greatest Hits" Abstract Volume  This volume remains popular in the US and abroad. Additional glossy copies were ordered as all from the first print run were quickly distributed. The new copies are available from JOI. All the volunteered "hits", including many not included in the printed version, remain online at www.joi-odp.org. In response to interest in the volume expressed by non-US EXCOM members, Nick Pisias sent a letter to these members on March 6 proposing the development of an "International Greatest Hits Volume". The letter, essentially a proposal, with cost estimates, has not elicited written responses as of May 28, 1998.

Post-Cruise Scientific Research Proposals  From January 1 to May 26, 1998, 26 post-cruise scientific research proposals were formally approved for funding by JOI as part of the US Science Support Program.

JOI/USSAC Newsletter  The March 1998 issue of the newsletter was published and distributed. It can be viewed on-line at www.joi-odp.org. The July newsletter is under construction.

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. USSSP is currently determining which institutions will be chosen to host these lecturers. Nearly 60 applications were considered after the May 1, 1998 application deadline.

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*
5. FY 1999

5.1 PRESENTATION OF THE FINAL FY '99 ODP BUDGET

Action Sought:

EXCOM is asked to review the FY 1999 ODP Budget.

The final FY 1999 ODP Budget is incorporated in the FY 1999 Program Plan which will be distributed to EXCOM Members under separate cover.

Background:

August 1997.
SCICOM considered the Draft FY 1999 Budget and developed a prioritization by groupings of non-leg related items. Following OPCOM, the total cost of leg enhancements and other X-Base items in the FY '99 schedule amounted to $3.8 million. Since the projected FY '99 X-base budget was $3.13 million, this resulted in a projected deficit of $700K.

January 1998
NSF announced the target figure for the FY99 budget of $48.5M, which represents an increase of 1.5% above 1998. It includes additional funds of $3M for the refit. At the EXCOM Meeting, the preliminary FY '99 budget for $49.4 million was presented by ODP Interim Director, Nick Pisias, indicating a deficit of $900 K. At the time, Pisias expressed confidence that the FY '99 budget could be balanced even though many X-Base items (i.e. microbiology lab, XRD, downhole lab, sampling parties, borehole stability, data migration, LDEO extra Leg Based, P-code receivers and FMS atlas) that SCICOM had prioritized in August had already been removed from the budget (refer to TAB 6). In fact, all that remained was leg-related science and engineering development. He outlined a process and timetable to address the matter, which EXCOM endorsed in EXCOM Consensus 98-1-5. Based on a Manager's meeting in March, a new budget was developed that mostly solves the problem, but still leaves a $96K deficit. As a consequence of the reconciliation of the FY '99 budget, it was not necessary for BCOM to meet.

EXCOM Consensus 98-1-5

By consensus, EXCOM accepts the preliminary FY 1999 budget, and requests JOI to proceed with further development and refinement of the budget, in conjunction with the JOIDES Advisory Panels and subcontractors, according to the timetable outlined by ODP Acting Director, Nick Pisias.
### 5.1 PRESENTATION OF THE FINAL FY 1999 ODP BUDGET

#### EXCOM SUMMARY

<table>
<thead>
<tr>
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<th>FY99</th>
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#### EXCOM SUMMARY

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### 5.1 PRESENTATION OF THE FINAL FY 1999 ODP BUDGET

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<th>ODP Total</th>
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<td>$166,923</td>
<td>$166,923</td>
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<td>TOTAL</td>
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<td>$4,936,042</td>
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**JOI Inc.**

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<tr>
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<td>JOIDES</td>
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<td>$164,765</td>
<td>$166,923</td>
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<td>TOTAL</td>
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<td>$4,936,042</td>
<td>$4,936,042</td>
<td>$4,936,042</td>
</tr>
</tbody>
</table>
5.0 FY 1999

5.2 IMPACT OF THE FINAL FY 1999 BUDGET ON PROGRAM DELIVERY

- FY 1999 SCIENCE PLAN
- ODP/TAMU
- WLS/LDEO

Action Sought:

EXCOM is asked to note the impact of the final FY 1999 budget on the FY 1999 Science Plan and on Program delivery.

Background:

In August 1997, SCICOM provided OPCOM with a prioritization by groupings of high-priced (> $100K) non-leg related items for the FY'99 budget. OPCOM referred to this prioritization when considering leg-related expenses for the FY 99 budget. Expensive items that were included are the Microbiology Facility, the XRD, and the expansion of the JOIDES Resolution Downhole Measurements Lab (~$400K). The total cost of leg enhancements for the FY 1999 ship operations schedule set by OPCOM, and subsequently approved by SCICOM, equaled $1.392 million. Additional costs for other X-Base items, however, in combination with the cost of leg-enhancements brought the total cost of the FY 1999 budget to $3.8 million, which exceeded the projected allocation for the FY99 X-Base budget ($3.13 million) by about $700K.

This realization prompted OPCOM to review SCICOM’s prioritized list of non-Leg X-Base items (above). OPCOM engaged in a lengthy discussion of the X-Base items in an effort to determine whether all leg-related costs were of higher priority than the others, and whether some of the leg-related costs were for Cadillac versions, and also grappled with how to integrate leg-related and non-leg related costs in order to achieve a meaningful prioritization. OPCOM placed the Microbiology lab in a separate category to designate that a special strategy would be employed in its acquisition.

At the time of the OPCOM Meeting, 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 (below), was given as advice to JOI as to the priorities for the Program.
5.2 IMPACT OF THE FY 1999 BUDGET ON PROGRAM DELIVERY

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

<table>
<thead>
<tr>
<th>$K (cost estimates are very rough estimates -August 1997)</th>
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<tr>
<td>1999 Dry-Dock 310 Non-negotiable, unavoidable costs</td>
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<td>PEC-V 50</td>
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<td>WWW Publishing 75</td>
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<td>Publications 205</td>
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<tr>
<td>TAMU-Leg-Based 900</td>
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<tr>
<td>Technical Support* 40 [To be provided by ESF]</td>
</tr>
<tr>
<td>LDEO Leg-Based 450</td>
</tr>
<tr>
<td>Hardrock Coring 400</td>
</tr>
<tr>
<td>Deep Drilling 100</td>
</tr>
<tr>
<td>Downhole Lab 400</td>
</tr>
<tr>
<td>CLIP II 60</td>
</tr>
<tr>
<td>Sampling parties 40</td>
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<tr>
<td>CoreSeis/Borehole Stability 40</td>
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<tr>
<td>XRD 150</td>
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<td>Data Migration 330</td>
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<tr>
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<td>P-Code Receivers 30</td>
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<tr>
<td>FMS Atlas 50</td>
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<td>Microbiology Facility 400 SPECIAL CATEGORY</td>
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JOI developed a preliminary FY’99 budget ($49.4 million), which factored in the impact of inflation and the newly negotiated day rate for the JOIDES Resolution, and presented it to EXCOM in January 1998. NSF’s target figure for the FY’99 budget was $48.5M. This preliminary FY’99 budget indicated a deficit of $900 K even though many of the non-leg related X-Base items (see items crossed off below) that SCICOM had prioritized in August had already been removed from the budget. All that remained was leg-related science and engineering development.

SCICOM’s August 1997 Recommendations of Priorities for the X-Base Budget

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<tr>
<td>TAMU-Leg-Based 900</td>
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<tr>
<td>Technical Support* 40 [To be provided by ESF]</td>
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<td>LDEO Leg-Based 450</td>
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<tr>
<td>Hardrock Coring 400</td>
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<tr>
<td>Deep Drilling 100</td>
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<td>Downhole Lab 400</td>
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<tr>
<td>CLIP II 60</td>
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<tr>
<td>*Sampling parties 40</td>
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</table>

*now incorporated into TAMU’s base budget
At a meeting at the JOI Office in February 1998, JOI, the subcontractors and the SCICOM Chair reconciled the budget so that the 1999 Program plan meets the target budget of $48.5M. The projected $900K deficit reported at the October EXCOM meeting was corrected by making the following general budget adjustments: 1) All items noted for elimination on SCICOM’s priority list of X-Base items (above; shown at the January EXCOM Meeting) were indeed cut. In addition, the purchase of hammer coring equipment was eliminated from the 1999 program plan (~$300K additional savings); 2) Re-evaluation of equipment needs in publication and databases reduced the cost of hardware purchases needed to fulfill mandates in publications and data distribution (~$150K savings); 3) reduction in payroll requests (~$100K savings); 4) savings in overhead by extending the Wireline Services contract rather than issuing a new contract (~$60K); 4) reduction of logging on specific legs (~$100K).

**Remainder of SCICOM’s August 1997 Recommendations of Priorities for the X-Base Budget**

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<th>$K</th>
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</thead>
<tbody>
<tr>
<td>Publications</td>
<td>295</td>
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<tr>
<td>TAMU-Leg-Based</td>
<td>900</td>
</tr>
<tr>
<td>Technical Support*</td>
<td>40 (individuals to be provided by ESF)</td>
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<tr>
<td>LDEO Leg-Based</td>
<td>450 -150</td>
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<tr>
<td>Hardrock Coring</td>
<td>400 -300</td>
</tr>
<tr>
<td>Deep Drilling</td>
<td>100</td>
</tr>
<tr>
<td>CLIP II</td>
<td>60</td>
</tr>
</tbody>
</table>

Overall the budget meets the scientific priorities of the Program. However, essentially all savings were made in areas where savings will not be realized in FY 2000. Thus, while the impact of increased day rates and inflation can be shown by resetting the balance of FY’99 to be zero, to make further $700K to $2M savings will require reduced delivery of science.
In March 1998 SCICOM and OPCOM prioritized the following budgetary items in the event that additional funds become available in FY’99. Big ticket items were not prioritized because the chances of getting sufficient funds for these are not high. SCICOM will revisit this prioritization in August by which time there may be some indication as to whether there are any additional funds to apply to these items.

<table>
<thead>
<tr>
<th>Consensus 98-1-3</th>
</tr>
</thead>
<tbody>
<tr>
<td>By consensus, SCICOM and OPCOM prioritize the following budgetary items should additional funds become available in FY’99:</td>
</tr>
<tr>
<td>1. GLT - Leg 185</td>
</tr>
<tr>
<td>2. 1 Operational Hammer</td>
</tr>
<tr>
<td>3. WST - Leg 184</td>
</tr>
<tr>
<td>4. WST - Leg 183</td>
</tr>
<tr>
<td>5. VSP - Leg 186</td>
</tr>
<tr>
<td>6. ARI - Legs 183, 185, 186</td>
</tr>
<tr>
<td>7. Microbiology Lab</td>
</tr>
</tbody>
</table>

Other Big Ticket Items:
- Downhole Measurements Lab $450K
- 1 Operational Hammer $157K

Other Items (in no particular order):
- Borehole Stability Project $ 16K
- CORESEIS $ 27K
- Gas Chromatograph $ 55K
- XRD $150K ($60K - used)
- Data Migration $ ????

The following items were deferred pending further information:
- Mirror Web Sites $ 50K per site
- SSDB Computer Tech $ 72K

This prioritization is preliminary and will be revisited at the August SCICOM meeting. The Chair of the Biosphere PPG will be invited to present the plans for implementation of microbiological sampling and to provide a range of estimates for equipment and facilities required.

**Importance of items eliminated from the FY 1999 Program Plan**

LDEO projects were all development projects, intended to address issues of software or data handling; requested funds were personnel funds. Only the CLIP-II project (not cut) is on-going.

- CORESEIS is a synthetic seismograph program targeted for the paleoceanographic community to determine synthetic seismograms in the shallowest section of the core data.
The Borehole Stability project is a modeling project that uses BHTV data and is designed to distinguish between fracturing (drilling-induced or natural), and ultimately the drillability of a hole. It was developed in industry and is used in horizontal drilling with potential application for some of the types of boreholes that ODP expects to drill in future.

The FMS Atlas is mainly an educational tool for user communities that are unfamiliar with borehole images.

LDEO Leg-Based
- GLT - Leg 185 ($87K). The GLT (Geochemical Logging Tool) is usually run in boreholes into basement and is considered essential by the co-chiefs to the objectives of Leg 185.
- WST - Legs 184 and 183, ($19K each). The WST (single component VSP) is an additional tool particularly recommended for paleoceanographic legs. It is used to correlate logs and seismic data, and to calibrate the sonic log.
- VSP (3 component) - Leg 186 ($45K).
- ARI - Legs 183, 185, 186 ($30-40K each). The ARI is an upgrade of the lateral log tool and is needed in hard rocks to provide information about flow lithology, stress, etc.

TAMU
- P-code receivers are needed to upgrade the GPS on the JOIDES Resolution.
- Technical support - high recovery legs where additional support is necessary. Note that ESF has said that they are willing to provide individuals for this.
- Hard rock coring and deep drilling - technological development, including the next phase of the hammer drill system, new casing strategies, new techniques to allow casing in difficult environments in order to facilitate deep drilling. Note that SCICOM reaffirmed ODP’s commitment to technological innovation based on priorities set at the SCICOM April 1997 meeting.
- Data migration - second phase.
5.3 APPROVAL OF THE FY 1999 PROGRAM PLAN

Action Sought:

EXCOM is asked to approve the FY 1999 Program Plan.

The FY 1999 Program Plan will be distributed to EXCOM Members under separate cover.

ODP SCIENCE PLAN FOR FY 1999: LEGS 182-186
6.1 POTENTIAL IMPACT OF PHASE III BUDGET PROJECTIONS ON PROGRAM DELIVERY

Action Sought:

EXCOM is asked to review the potential impact of the Phase III budget projections on Program delivery.

Background:

The summary of the impact of inflation and day rate increases resulting from the renegotiations of the ODL contract on Phase III budgets that was presented to EXCOM in January 1998 is shown here again as 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>5 year Plan</td>
<td>$16.89</td>
<td>$16.89</td>
<td>$17.12</td>
<td>$17.48</td>
<td>$17.89</td>
<td>$69.38</td>
</tr>
<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>
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<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></td>
<td>$3.56</td>
</tr>
</tbody>
</table>

### TOTAL BUDGET IMPACT

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th>TOTALS</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLATION + DAY RATE</td>
<td>$0.77</td>
<td>$1.13</td>
<td>$1.61</td>
<td>$2.35</td>
<td></td>
<td>$5.86</td>
</tr>
</tbody>
</table>

It was reported to EXCOM in January that the total impact of inflation (assumed to be 2%) and day rate increases from $0.77M in FY99 to $5.86M in FY02. In January, Pisias told EXCOM that while he was confident the budget could be balanced for FY99, it was unlikely that similar savings could be found in future years without a reduction in services. Hence, in Motion 98-1-8, EXCOM tasked JOIDES with the prioritization of the services that would be cut if necessary. SCICOM's response to this motion follows (TAB 9).
Based on some more recent estimates and efforts to balance the FY'99 budget, the budget numbers have been revised to reflect an impact of inflation and day rate increasing from $0 in FY'99 to $2.57M in FY'02.

<table>
<thead>
<tr>
<th>REVISED BUDGET IMPACT</th>
<th>$0.0</th>
<th>$0.6</th>
<th>$2.57</th>
</tr>
</thead>
<tbody>
<tr>
<td>INFLATION + DAY RATE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The FY'99 budget was reconciled by (1) eliminating all the non-leg related X-Base items that SCICOM had prioritized in August, 1997, (2) cuts in salary, (3) delaying until FY'00 the purchase of equipment for the hammer drilling system, and (4) delaying the purchase of permanent equipment required by the Publications and Information Services Departments at ODP-TAMU. In the out years, potential sources of funds to balance the budget may include uncommitted carry-over and additional funds from China joining the Program. Any additional funding for ODP from NSF would come out of the US science budget. It is clear that if these projected deficits cannot be reconciled, choices for drilling will be made from among some of the highest priority science programs, seriously compromising the Program.
6.1 POTENTIAL IMPACT OF PHASE III BUDGET PROJECTIONS ON PROGRAM DELIVERY

ODP Annual Budget
(in constant CPI adjusted FY94 dollars)

(showing a projected 18.5% reduction in effective ODP budget over 8 years)

US Fiscal Year

$ million

day rate increase
"bonus"
6.1 POTENTIAL IMPACT OF PHASE III BUDGET PROJECTIONS ON PROGRAM DELIVERY
6.0 PHASE III ISSUES
6.1 SCICOM RESPONSE TO EXCOM MOTION 98-1-8

Action Sought

EXCOM is asked to review and comment on SCICOM’S response to EXCOM Motion 98-1-8.

EXCOM Motion 98-1-8

Presently determined budgetary constraints through 2003 will negatively impact the delivery of the Long Range Plan. EXCOM asks SCICOM to prioritize future science objectives to maximize the objectives of the Long Range Plan, clearly indicating those which cannot be achieved under existing budget projections. SCICOM should also identify and prioritize changes in program activities, services, equipment needs and technological development. SCICOM is asked to forward its report to EXCOM by September 1998.

Background

At the January 1998 EXCOM Meeting, Nick Pisias, the Interim ODP Director, presented projections of a decreasing budget for ODP over the next five years. In response, EXCOM passed Motion 98-1-8 directing SCICOM to examine the LRP in terms of the long term budget projections and prioritize future scientific objectives. In March, SCICOM developed a procedure for the prioritization of all programmatic, technological and service activities (SCICOM Consensus 98-1-4), and charged various sub-groups with the compilation of scientific objectives/themes for Phase III, and their accompanying technological development, shipboard, downhole and database services. In August, SCICOM will examine and refine the prioritization carried out by these sub-groups. After the SCICOM meeting, the report requested in EXCOM Motion 98-1-8 will be prepared and, following additional SCICOM and JOIDES review, submitted to EXCOM in September.

SCICOM UPDATE ON THE DEVELOPMENT OF A PROCEDURE FOR PRIORITIZATION OF ALL PROGRAMMATIC, TECHNOLOGICAL AND SERVICE ACTIVITIES

At its March meeting, SCICOM took the view that this exercise must be one of building the Program from the basics, rather than one of cutting out objectives in the Long Range Plan. It was decided that a programmatic approach consisting of three activities would be undertaken:
1. Activities required for the Development of a Prioritized Framework

- prioritization of scientific objectives/themes for Phase III, and their accompanying technological development. The SSEPs were asked to begin this at their May meeting, and to provide advice to SCICOM by the end of June.

- identification of services (i.e. shipboard, downhole, shore-based, database, etc.) required for the accomplishment of each scientific theme for Phase III. SCIMP was already tasked with this at their February meeting.

- compilation of a prioritized list of scientific objectives/themes for Phase III, and their accompanying technological development, shipboard, downhole and database services. This will be done by sub-groups of SCICOM and presented at the August SCICOM meeting.

2. Development of a Mechanism and Timetable

By Consensus 89-1-4, SCICOM adopted the following procedure to produce the prioritized framework:
SCICOM is divided into two sub-groups to deal with prioritization of Environment and Interior objectives. Ken Miller will lead the Environment Group; Julian Pearce will lead the Interior Group; and Casey Moore will ensure that the fluid flow objectives (which might otherwise fall between the two groups) are prioritized.
7.0 REVISED POLICY ON JOIDES PANEL REPRESENTATION FOR ASSOCIATE MEMBERS

Action Sought:

EXCOM is asked to review and comment on the revised policy on Associate Membership levels with corresponding JOIDES panel representation, and recommend its adoption to ODP Council.

Background:

Participation in JOIDES and ODP depends on a valid MOU with NSF, although JOIDES defines its own internal committee structure. Until 1995, there was, at least on paper, only one class of membership - Full membership for individual countries or consortia. In July 1995, EXCOM and ODP Council approved a new class of Associate membership primarily as a means of recruiting new members to ODP. Membership levels were defined in terms of 1/6 proportions of a full membership and were given different levels of participation in the (old) JOIDES panel structure according to the level of contribution. China is the first (and so far the only) Associate member. The 1995 policy clearly stated that “Associate membership is open only to countries/institutions who are not currently full ODP members, or participants in current ODP consortia”.

In practice, however, the PACRIM consortium has not been contributing a full membership but has been permitted by ODP Council/EXCOM to continue to participate fully in the Program, and in the JOIDES panels, while they worked toward full membership. France's decision to reduce its membership contribution from $3M/yr. to $2M/yr. (or less) beginning in FY’99 has again raised this issue of partial membership, not just for France, but for PACRIM, and perhaps even for other members who are unable to raise a full membership subscription in a given year.

In consideration of the above, it became clear that it was necessary to revise the ODP membership policy in order to deal with issues of partial memberships, and to develop a more vigorous and innovative membership recruitment strategy. Hence, in January EXCOM requested that JOI re-examine the present membership recruitment strategy to see how it could be improved and changed, including the revision of Associate membership status.
EXCOM Motion 98-1-7

In light of a desire to increase the overall funding of ODP by addition of new members, EXCOM requests that JOI update its strategy for international participation. In particular attention should be paid to (1) identifying the benefits of Associate Membership so that there are adequate incentives for increasing contributions toward Full Membership, (2) suggesting the role that the ODP Council should play in assisting JOI, (3) identifying the elements of a multi-faceted recruiting strategy including appeals to industrial, political, and mission agency constituencies, as well as academic communities and international organizations (like the OECD).

The document below represents an effort undertaken by the EXCOM Chair to address the revision of associate membership status. Three categories of associate membership in ODP with concomitant benefits are proposed. This document has been reviewed by NSF.

The policy outlined in this document is based on several principles:

- Only Full members of ODP (whether individual member or consortia) will have voting rights in the policy and scientific decision making for ODP (i.e. on EXCOM and SCICOM). All other levels of membership do not include representation on EXCOM and SCICOM.

- Shipboard participation will be directly proportional to the contribution for each membership level. Participation in JOIDES Advisory panels will also depend on the level of contribution.

- The membership policy should provide sufficient incentives for Associate members to upgrade to full membership, as well as to attract new members at the Associate level.

ODP MEMBERSHIP

DRAFT - 14 MAY 1998

The Ocean Drilling Program has benefited significantly from a policy of full and equal participation for its non-US members. This policy has facilitated long-term financial and scientific planning while providing stability in provision of Program services and operations. It has also encouraged full and active participation from the member scientific communities in the analysis and interpretation of drilling results.
Although a policy of full and equal participation should remain a goal of ODP, it is apparent that financial constraints within member countries during phase III will limit attainment of this goal. This document therefore identifies the degrees of participation in the JOIDES Advisory Structure at reduced membership levels. Membership levels will consist of Full Members and three levels of Associate Membership. Each level has defined degrees of participation in the JOIDES Advisory Structure. Countries and consortia at all levels have the right to send an observer to all meetings.

Only Full Members of ODP (whether individual countries or consortia) have voting rights in the policy- and scientific-decision making for ODP (i.e. on EXCOM and SCICOM)**. All other levels of membership do not include representation on EXCOM and SCICOM.

For the purposes of defining the Associate Member levels, the standing Panels and Committees within the JOIDES Advisory Structure are divided into three groups:

**Group I** (Highest level of advice on ODP science and policy)
- EXCOM
- SCICOM

**Group II** (Scientific advice)
- ESSEP
- ISSEP

**Group III** (Technical and operational advice)
- SCIMP
- SSP
- TEDCOM
- PPSP

**Privileges of Different Membership Levels**

1. **SHIPBOARD PARTICIPATION**

Shipboard participation will be directly proportional to the contribution for each membership level (as defined below).
2. PARTICIPATION IN THE JOIDES ADVISORY STRUCTURE

<table>
<thead>
<tr>
<th>Membership Level</th>
<th>Contribution</th>
<th>Privileges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full</td>
<td>Full</td>
<td>One member on all Panels of Groups I, II &amp; III;</td>
</tr>
<tr>
<td>Associate 3</td>
<td>2/3</td>
<td>One member on all Panels of Groups II &amp; III;</td>
</tr>
<tr>
<td>Associate 2</td>
<td>1/2</td>
<td>One member on one Panel from Group II; One member on two Panels from Group III;</td>
</tr>
<tr>
<td>Associate 1</td>
<td>1/6</td>
<td>One member on one Panel from Group II; One member on one Panel from Group III</td>
</tr>
</tbody>
</table>

** - Countries/consortia who have been Full Members in the past, but fall below their full membership contribution will be permitted to retain their Full Member participation privileges for one year on the conditions that:

- their contribution remains at or above the 5/6 level;
- they make a formal commitment to work towards full membership within a year.

If after one year Full Membership is not achieved, but the contribution remains at or above the 5/6 level, then voting rights on SCICOM will be revoked until such time as Full Membership is achieved.

Countries/consortia who have been Full Members in the past, but whose contribution falls below the 5/6 level but remains above or above the 2/3 level will lose voting rights on SCICOM but will retain membership on EXCOM for one year provided that they make a formal commitment to work towards full membership within a year. If after one year the contribution remains below the 5/6 level, then the member reverts to one of the three levels of Associate Membership outlined above.
8.0 SCICOM REPORT

The complete minutes of the March OPCOM and SCICOM Meetings are available on the JOIDES Office web site at http://www.whoi.edu/joides/. Copies are also available for viewing at this EXCOM meeting.

8.1 EXCOM Approval of the Four Year Ship Track for the JOIDES Resolution through FY'01.

Action Sought:

EXCOM is asked to approve the Four Year Ship Track for the JOIDES Resolution.

SCICOM Motion 98-1-11
In order to fulfill the objectives of the LRP and to respond to existing proposals, SCICOM establishes that the general ship track for the JOIDES Resolution will remain in the Indian and Pacific Oceans through FY'01. SCICOM anticipates that the ship will return to the Atlantic Ocean prior to the end of Phase III.
Liaisons

Mahlon Ball  US Geological Survey, Denver (PPSP Chair)
Jack Baldauf  Science Operator (ODP-TAMU)
Joris Gieskes  Scripps Institution of Oceanography (SCIMP Chair)
Bruce Malfait  U.S. National Science Foundation
Nick Pisias  Joint Oceanographic Institutions, Inc.
Mary Reagan  Wireline Logging Services (ODP-LDEO)
Shiri Srivastava  Geological Survey of Canada Atlantic (SSP Chair)

Guests & Observers

Warner Brückmann  GEOMAR, JOIDES Office Science Coordinator (elect)
Christina Chondrogianni  JOIDES Office, Woods Hole Oceanographic Institution
Kathy Ellis  JOIDES Office, Woods Hole Oceanographic Institution
John Farrell  Joint Oceanographic Institutions, Inc.
P. Jeff Fox  Science Operator, ODP-TAMU
Dave Goldberg  Wireline Logging Services (ODP-LDEO)
Bill Hay  GEOMAR, SCICOM Chair (elect)
Kate Moran  Geological Survey of Canada Atlantic
Tom Janecek  Florida State University (SCIMP Chair - elect)
Shirley Waskiewicz  JOIDES Office, Woods Hole Oceanographic Institution

Apologies

Alister Skinner  British Geological Survey, TEDCOM Chair

Summary of OPCOM Consensus Items

Consensus 98-1-1
In response to the possibility of a loss of 2 days to Leg 179 due to the installation of the lower guide horn, OPCOM confirms the following prioritization of operations: hammer drill testing, drilling of the NERO/ION hole, the offset seismic experiment requiring a rendezvous with the RV Sonne (two ship experiment), followed by the other planned experiments.
Consensus 98-1-2
OPCOM recommends to SCICOM the following prioritization for the use of any additional SOE funds that become available in FY99:

OPCOM Recommended Prioritization of ODP SOE Options for FY 1999

| 1. GLT - Leg 185 | $87K |
| 2. 1 Operational Hammer | $157K |
| 3. WST - Leg 184 | $19K |
| 4. WST - Leg 183 | $19K |
| 5. VSP - Leg 186 | $45K |
| 6. ARI - Legs 183, 185, 186 | $30-40K each |

Other Big Ticket Items:
- DML Microbiology lab $450K
- 1 Operational Hammer $200K

Other Items (in no particular order):
- Borehole Stability Project $16K
- CORESEIS $27K
- Gas Chromatograph $55K
- XRD $150K ($60K - used)
- Data Migration $???

The following items were deferred pending further information:
- Mirror Web Sites $50K per site
- SSDB Computer Tech $72K

(Note: SCICOM/OPCOM made some changes to this priority list at their joint meeting the following day).

Consensus 98-1-3
OPCOM accepts the SSP recommendation that the winter deadline for submission of data to the Data Bank be changed from January 1 to February 1.

Consensus 98-1-4
OPCOM accepts SCIMP Recommendation 98-1 that the 6-month deferral period prior to sampling the Permanent Archive (PA) no longer be required. Implementation of the PA sampling should be overseen by the ODP Curator on a core-by-core basis, and the approval of the CAB for requests to sample the PA will be required in each case.
Consensus 98-1-5
OPCOM notes SCIMP Recommendation 98-5 regarding the importance of sequential drilling and logging of sections of a drillhole, and encourages Co-Chiefs to consider this in their cruise planning and operations.

Consensus (by E-Mail) 98-1-6
OPCOM accepts the recommendations made by the Micropaleontological Reference Center Lead Curator regarding the distribution of slides to various paleontological investigators.

Summary of OPCOM Action Items

Action Item 98-1-1A
ODP-TAMU will complete the document on the policy and procedures for drilling in strong currents in time for the August SCICOM/OPCOM Meeting.

Action Item 98-1-2A
OPCOM requests that ODP-TAMU provide a written report to the JANUS Steering Committee and SCIMP on the problems encountered on Leg 177 that resulted in no paleo-data being entered in the JANUS database. The JANUS SC will review this report to determine what changes need to be made.

Action Item 98-1-3A
OPCOM requests that the JOIDES Office work with ODP-TAMU to ensure that responsibilities for scientists participating on an ODP leg are clearly set out and communicated to scientists.

Action Item 98-1-4A
OPCOM requests ODP-TAMU to investigate the possibility of requesting donations of used equipment (in particular, gas chromatographs) to ODP.

Action Item 98-1-5A
OPCOM requests that SCIMP develop a plan for the archiving and distribution of ODP data and publications in order that OPCOM can have adequate information to make decisions on such things as web sites.

Action Item 98-1-6A
OPCOM requests the LDEO-BRG conduct a critical review of the status of high temperature tools for a potential leg in the Manus Basin based on Proposal 479, the Pacmanus felsic-hosted hydrothermal system. In their review, LDEO-BRG should consider input from the SSEPs on the types of measurements that are desirable.
**Action Item 98-1-7A**
The JOIDES Office will request that the Nankai proponents work with the SSEPs, ODP/TAMU, and LDEO-BRG to clearly define their overall drilling and logging strategy prior to the August SCICOM Meeting. Note: Confusion is connected to whether the SSEPs support a one or two leg program, and which experiments (packers and CORKs) and logging programs will be carried out.

**Action Item 98-1-8A**
The SCICOM Chair will communicate with the SSEPs Chairs prior to the May meeting in order to clarify the role of the SSP liaisons as conveyors of important site survey information on proposals.

**Action Item 98-1-9A**
OPCOM requests that SCIMP develop an integrated policy for sampling, data, and publications in collaboration with the ODP Publications Office and the CAB. This will include revision of the section of the ODP Publications Policy that addresses the issue of "non-performance" and which defines the obligations of the scientists participating on ODP Legs.

**Action Item 98-1-10A**
The LDEO/BRG liaison to SCIMP will present a summary of the proposed logging plans of highly regarded proposals to SCIMP for their comment.

**Action Item 98-1-11A**
The SCICOM/OPCOM Chair will communicate with OPCOM members regarding acceptance of the recommendations made by the MRC (Micropaleontological Reference Center).

**Action Item 98-1-12A**
SCIMP will identify a liaison to the Deep Biosphere PPG.

**Action Item 98-1-13A**
The SCICOM Chair will inform the national committees of the need for an individual with microbiology expertise to serve on SCIMP when next there is a membership change on the panel.

**Action Item 98-1-14A**
OPCOM requests that ODP-TAMU include the plans for the expansion of the DML in the bid packages to go out to dry-dock vendors, with some caveat, so that it would be possible to fund this project in the event that sufficient cost-savings become available.
Science Committee (SCICOM) Meeting

19-20 March 1998
Boulder, Colorado
DRAFT MINUTES

SCICOM Participant List

SCICOM Members

Kevin Brown
Steve d'Hondt
Susan Humphris (Chair)
Hermann Kudrass
John Ludden
Judith McKenzie
Kenneth Miller
Gregory Moore
J. Casey Moore
Greg Mountain
Jonathan Overpeck
Julian Pearce
Maureen Raymo
Steve Scott
Kensaku Tamaki

Univ. of California San Diego, Scripps Institution of Oceanography
University of Rhode Island, Graduate School of Oceanography
Woods Hole Oceanographic Institution
Bundesanstalt für Geowissenschaften und Rohstoffe, Germany
CRPG, Vandoeuvre-les-Nancy, France
Swiss Federal Institute of Technology (ETH), Zurich
Rutgers, The State University, New Brunswick
University of Hawaii
University of California, Santa Cruz
Lamont-Doherty Earth Observatory, Columbia University
NGDC, NOAA, Boulder
University of Durham, United Kingdom
Massachusetts Institute of Technology, Cambridge
Canadian Secretariat for Ocean Drilling, Toronto
Ocean Research Institute, University of Tokyo, Japan

1 - alternate for Roger Larson
2 - alternate for Gerard Bond

Liaisons

Jack Baldauf
Dave Goldberg
Bruce Malfait
Nick Pisias

Science Operator (ODP-TAMU)
Wireline Logging Services (ODP-LDEO)
U.S. National Science Foundation
Joint Oceanographic Institutions, Inc.
Guests & Observers

Jamie Austin  UTIG, Austin
Wolf Berger  Univ. of California San Diego, Scripps Institution of Oceanography
Warner Brückmann  GEOMAR, JOIDES Office Science Coordinator (elect)
Ju-Chin Chen  Chinese Taipei ODP Consortium
Christina Chondrogianni  JOIDES Office, Woods Hole Oceanographic Institution
Kathy Ellins  JOIDES Office, Woods Hole Oceanographic Institution
John Farrell  Joint Oceanographic Institutions, Inc.
P. Jeff Fox  Science Operator, ODP-TAMU
Bill Hay  GEOMAR, SCICOM Chair (elect)
Brian Jonasson  ODP-TAMU
Jock Keene  University of Sydney, Australia
Kazu Kitazawa  JAMSTEC, Japan
Kate Moran  Geological Survey of Canada Atlantic
Mary Reagan  Wireline Logging Services (ODP-LDEO)
Shiri Srivastava  Geological Survey of Canada Atlantic (SSP Chair)
Takeo Tanaka  JAMSTEC, Japan
Shirley Waskilewicz  JOIDES Office, Woods Hole Oceanographic Institution

Apologies

Emily Klein  Duke University

Summary of DRAFT Motions and Consensus

Motion 98-1-1

SCICOM and OPCOM approve the Agenda for their Joint March 1998 meeting, and SCICOM approves the Agenda for its March 1998 meeting.

OPCOM: Approval by Consensus

SCICOM: Proposed: S. Scott; Second: G. Moore  15 in Favor; 1 Absent

Motion 98-1-2

SCICOM approves the Minutes of the August 1997 SCICOM Meeting held in Davos, Switzerland.

Proposed: S. Scott; Second: G. Moore  9 in Favor; 6 Abstentions; 1 Absent
Consensus

By consensus, SCICOM and OPCOM prioritize the following budgetary items should additional funds become available in FY'99:

1. GLT - Leg 185 $ 87K
2. 1 Operational Hammer $157K
3. WST - Leg 184 $ 19K
4. WST - Leg 183 $ 19K
5. VSP - Leg 186 $ 45K
6. ARI - Legs 183, 185, 186 $ 30-40K each
7. Microbiology Lab $30-150K

Other Big Ticket Items:
- Downhole Measurements Lab $450K
- 1 Operational Hammer $157K

Other Items (in no particular order):
- Borehole Stability Project $ 16K
- CORESEIS $ 27K
- Gas Chromatograph $ 55K
- XRD $150K ($60K - used)
- Data Migration $ ???

The following items were deferred pending further information:
- Mirror Web Sites $ 50K per site
- SSDB Computer Tech $ 72K

This prioritization is preliminary and will be revisited at the August SCICOM meeting. The Chair of the Biosphere PPG will be invited to present the plans for implementation of microbiological sampling and to provide a range of estimates for equipment and facilities required.

Consensus

In response to EXCOM Motion 98-1-8, SCICOM adopts the following procedure to provide a framework based on a prioritization of themes of the Long Range Plan for future budgetary decisions:
Consensus

By consensus, OPCOM and SCICOM thank the JOI JANUS Steering Committee and, in particular, Kate Moran for their dedication and effort in successfully implementing Phase I of JANUS.

Consensus

By consensus and in response to EXCOM Motion 98-1-13, SCICOM will set up a Technical and Operations Workshop in the fall of 1998 to provide advice on the most effective mechanisms to determine the technical requirements and infrastructure of IODP.

Motion 98-1-3

In response to EXCOM Motion 98-1-12, SCICOM sets up Organizing Committee for the 1999 Conference on the Scientific Objectives of Ocean Drilling in the 21st Century with the following mandate:
Conference on the Scientific Objectives of Ocean Drilling in the 21st Century: Mandate for the Organizing Committee

Overall Goal

To set up and coordinate an international conference to define the major scientific objectives of a program of ocean drilling that will span at least the first decade of the 21st century.

Mandate

To define the scientific objectives for future ocean drilling that will complement those already enunciated for riser drilling by CONCORD. This will be accomplished in the following manner:

- a widely publicized call for 1-2 page extended abstracts that describe a drilling project, and define its scientific objectives, their importance, and the necessity for drilling;
- development of a conference structure and agenda, based on the input from the extended abstracts;
- selection of members for the Organizing Committee to provide the breadth of expertise dictated by the extended abstracts, and to act as Session Chairs;
- determination of a list of invited participants;
- organization and execution of a Conference in April-May 1999;
- preparation of a final document that defines the proposed new and exciting program of scientific ocean drilling.

Timeline

- April-May: Format definition for extended abstracts
- June: Call for extended abstracts
- September: Deadline for extended abstracts
- October: Selection of additional members of the Organizing Committee
- January: Status report to EXCOM
- April-May: Conference
- June: Publication of final report

Membership

SCICOM will appoint an Executive group of the Organizing Committee who will initiate the call for extended abstracts and make preliminary plans for the Conference. This group will consist of 4-6 international scientists who represent a range of expertise, have good organizational skills, and excellent and timely writing ability.
Once the extended abstracts are reviewed, the Executive group will then select an additional group (up to 10) to serve on the Organizing Committee and act as Chairs of Sessions. These will be selected on the basis of their specific expertise and their ability to run effective sessions. They will be responsible for a written, post-meeting report for their session that will then be integrated with the others by the Executive group.

Proposed: C. Moore  Seconded: J. Ludden  15 in Favor; 1 Absent.

Motion 98-1-4

SCICOM recommends the following individuals for the Organizing Committee of the 1999 Conference on the Scientific Objectives of Ocean Drilling in the 21st Century:

N. Pisias (Co-Chair)
A. Taira (Co-Chair)
L. Mayer
M. McNutt
H. Okada
R. Zahn

Alternates in the event that these individuals will not serve are:

T. Moore (alternate for N. Pisias)
K. Moran (alternate for L. Mayer)
R. Larson or R. Detrick (alternate for M. McNutt)
J. Cann (alternate for R. Zahn).

Proposed: G. Moore  Seconded: C. Moore  14 in Favor; 2 Absent.

Motion 98-1-5

In response to EXCOM Motion 98-1-13, SCICOM establishes a Seismogenic Zone Detailed Planning Group to plan for the first leg of riser drilling in IODP. Its mandate is as follows:

Overall Goal
To define a comprehensive study of an active seismogenic zone that will investigate the physical and chemical processes that control earthquake nucleation and propagation. This will include development of a coordinated drilling plan, and identification of drilling, monitoring, technological, and site survey requirements. This study will be the first project to be undertaken by IODP using the new riser drilling ship.

Mandate
To work with other appropriate international geoscience initiatives to:
1. Define the detailed scientific objectives of drilling and monitoring an active seismogenic zone.
2. Develop a coordinated drilling strategy to complete the defined objectives that will likely include an integrated program of non-riser and riser drilling.
3. Identify potential geographic areas as targets for drilling that are in the vicinity of Japan.
4. Determine the site survey requirements both for deep drilling and to maximize the scientific results from seismogenic zone drilling.
5. Determine the drilling technologies/facilities, downhole measurements and sampling, and long-term monitoring that will be required.
6. Solicit proposals for experiments or investigative strategies that might be included.

Timeline
- By the year 2000, the DPG will produce a written report of the overall plan and its recommendations for implementation.

Proposed: S. Scott Second: M. Raymo 15 in Favor; 1 Absent.

Motion 98-1-6

SCICOM appoints the following members to the Seismogenic Detailed Planning Group to begin the planning process by publishing a request for proposals as soon as possible with a submittal deadline on 1 August 1998:

R. Hyndman (Chair) Canada
G. Harjes Germany
S. Kodaira Japan
K. Brown US
J.P. Foucher France

SCICOM expects to augment this group based on proposal submissions at its August meeting.

Proposed: S. Scott Second: J. Pearce 13 in Favor; 3 Absent.

Motion 98-1-7

In order to fulfill the objectives of the LRP and to respond to existing proposals, SCICOM establishes that the general ship track for the JOIDES Resolution will remain in the Indian and Pacific Oceans through FY'01. SCICOM anticipates that the ship will return to the Atlantic Ocean prior to the end of Phase III.

Motion 98-1-8

SCICOM endorses convening an International Sea Level Workshop. The workshop will review principles of studying sea-level change, review results of recent ODP drilling for sea-level objectives, re-evaluate drilling strategies, and review possible future drilling targets.

Proposed: K. Miller  Second: C. Moore  14 in Favor; 2 Absent.

Motion 98-1-9

SCICOM echoes EXCOM's concern (EXCOM Motion 98-1-3) regarding the possible reduction of French participation in ODP. France is a valuable founding member of ODP and her scientists have contributed extensively to the understanding of Earth processes through ocean drilling. In fairness to all other members, however, the possible reduction of France's financial contribution must be accompanied by a reduction in representation in the JOIDES Advisory Structure and participation in shipboard activities. France has been a welcomed member at SCICOM and we hope that a mechanism for their continued participation will be found.

Proposed: G. Mountain  Second: C. Moore  13 in Favor; 1 Abstention; 2 Absent.

Consensus

By consensus, SCICOM appoints John Diebold to replace Shiri Srivastava as the Chair of the Site Survey Panel following their July 1998 meeting.

Consensus

Recognizing that Shiri Srivastava's last meeting as the Chair of the Site Survey Panel occurs before SCICOM's next meeting, SCICOM extends its thanks to Shiri for serving as a tireless SSP Chair. His good-natured tenacity guided SSP in developing and maintaining high standards for site survey readiness; the science derived from ocean drilling is much improved because of these efforts. SCICOM wishes him well in all his future ventures.
Consensus

With the rotation of Joris Gieskes from his most recent JOIDES advisory position as SCIMP chair, SCICOM would like to acknowledge the numerous outstanding and long lasting contributions he has made to ODP planning and science. In particular, he has skillfully managed a smooth transition from a system utilizing multiple service panels into a single integrated Scientific Measurements Panel.

Consensus

SCICOM would like to thank Judy McKenzie for her years of service on both this committee and PCOM. Her invaluable input into a wide variety of diverse topics, and steadfast support for the newly burgeoning field of microbiology, will leave a significant positive imprint on the direction of ocean drilling in the coming years.

Consensus

SCICOM sincerely thanks Ellen Kappel for her many years of dedicated effort in support of ODP. During her tenure with JOI and the ODP, Ellen selflessly worked to advance the science of the program. She led new initiatives to promote ODP through outreach programs that have been broadly recognized for their excellence. Ellen's hard work, dedication, fairness and enthusiasm have provided a strong foundation for advancing the scientific and technical excellence of the Program. The "heart and soul" of JOI will be missed, but her legacy will live on. We extend our best wishes for success in her future endeavors.

Consensus

SCICOM thanks Jonathan Overpeck and NGDC for hosting our March 1998 meeting in this mile-high winter wonderland. They provided us with a wonderful opportunity to learn about the world’s leading data archiving center, take home stunning maps, view snow-capped peaks, dine on mountain trout and caribou, and experience the full range of Colorado climatic variability. Thank you for a well-organized and highly enjoyable meeting.
9.0 MANAGEMENT AND OPERATIONS REPORTS
9.1 JOI MANAGEMENT REPORT

Action Sought:

EXCOM is asked to review and comment on the JOI 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.

9.1.1 LEADERSHIP CHANGES AT JOI/ODP

At the SCICOM meeting in August 1997, 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 would end on December 31, 1997. A search for a new Director began in September and Nicklas Pisias was named the interim Director as of January 1, 1998. Pisias's tenure will end on June 30th because Kathryn Moran, formerly of the Geological Survey of Canada, was named the new Director in early May. Moran will become a JOI employee as of June 19, 1998 and, with Pisias, will attend the June EXCOM meeting as one of her first actions as Director.

Effective January 1, John Farrell was promoted to the positions of Associate Director, ODP, and Director, USSSP.

Frank Rack was hired as the ODP Assistant Program Director on April 14, 1998 and began employment on May 4. Rack (TAMU PhD, 1992), comes to JOI from New Brunswick, Canada, where he worked with Larry Mayer as a Research Associate in the Department of Geodesy and Geomatics Engineering at the University of New Brunswick. Rack was formerly a Staff Scientist at ODP/TAMU and has sailed on seven ODP legs.
9.1.2 UPDATE ON THE STRATEGY FOR INTERNATIONAL PARTICIPATION IN ODP (EXCOM MOTION 98-1-7).

Action Sought:

EXCOM is asked to note that action on EXCOM Motion 98-1-7 has been delayed because of the flux in JOI staff since the last EXCOM meeting. The EXCOM Chair, however, has led the effort to address the revision of associate membership status (refer to TAB 9).

EXCOM Motion 98-1-7

In light of a desire to increase the overall funding of ODP by addition of new members, EXCOM requests that JOI update its strategy for international participation. In particular attention should be paid to (1) identifying the benefits of Associate Membership so that there are adequate incentives for increasing contributions toward Full Membership, (2) suggesting the role that the ODP Council should play in assisting JOI, (3) identifying the elements of a multi-faceted recruiting strategy including appeals to industrial, political, and mission agency constituencies, as well as academic communities and international organizations (like the OECD).

EXCOM Consensus 98-1-6

By consensus, EXCOM establishes an advisory committee composed of Feary, Stoffa, and Eldholm to work with the acting and future ODP Director in recruiting new members to the Program.

ODP (JOI) INTERNATIONALIZATION REPORT

During this interim period, JOI has not revised the Internationalization Strategy first developed by David Falvey. This task will fall to Kate Moran in the coming months. However, since January, there has been significant progress in recruitment efforts that fall under the parameters of the existing strategy. In collaboration with numerous individuals and committees, JOI has followed the general approach outlined in the original strategy to accomplish these goals.
The new internationalization strategy will recognize the complexities of recruiting new members and obtaining support from innovative sources. The accomplishments of the past several months illustrate the need for a comprehensive and multi-approach strategy. The following is a review of the recruitment efforts which have taken place since January 1998.

THE PEOPLE'S REPUBLIC OF CHINA

The People's Republic of China finalized their commitment to ODP in late April. They have joined as an Associate Member at the 1/6 level.

SOUTH AFRICA

ODP capitalized on the final Cape Town port call (April '98) with the goal of generating interest among potential supporters for South Africa/ Southern Africa Ocean Drilling Program Consortium. In collaboration with the University of Cape Town (UCT), a series of events were organized including VIP ship tours and reception, student tours and media outreach. John Compton serves as head of the steering committee that oversees the membership effort.

The strong support demonstrated by UCT during the VIP reception made a favorable impression on members of SOEKOR (oil company) and the Council of Geoscience. These two groups are considered important and will be targeted for membership support.

The goal is to obtain an Associate Membership at 1/12 for an initial three year period (1999 - 2001). Ideally, the consortium would increase its participation to 1/6 level after three years.

A consortium would include countries from sub-Saharan Africa. Potential consortium members include: (Coastal countries with expanding hydrocarbon exploration) South Africa; Namibia; Angola; Congo; Mozambique; Tanzania; (Land-locked countries with potential interest) Zambia; Botswana; Zimbabwe.

Compton and the steering committee have completed the proposal for a Southern Africa Ocean Drilling Program Consortium with the steering committee. The proposal is currently being reviewed by ODP and will be cleared through UCT. Compton is finalizing a target list of multi-national resource companies (e.g., Philips, Elf, Shell) and individuals. Proposals will be sent out for consideration at the end of June.

IRELAND

In early April, Peadar McArdle, Director of the Geological Survey of Ireland, expressed interest in pursuing ODP membership through the European Consortium. McArdle and
his colleague, Raymond Keary, have been in direct contact with Judy McKenzie and the JOI office.

They have received preliminary information about the costs and benefits of joining ECOD and ODP background materials. If Ireland were to join ECOD, they would join the Southern Group to balance the 50:50 contribution. In order to take advantage of the location and gathering of individuals, McArdle and Keary have been invited to attend EXCOM as observers and specifically, to meet with ODP management and the international committee.

INDIA

Earlier this spring, JOI received a query from Kuldeep Chandra, KDM Institute of Petroleum Exploration (see the appropriate TAB). Chandra wanted more information about ODP and specifically, gas hydrates research. JOI's response letter is enclosed (TAB 13). JOI feels this is an opportune time to pursue Indian membership, whether it be a traditional partnership or an innovative agreement, where India would support specific research. JOI is primarily interested in bringing in India as a full partner.

As follow-up to an effort started a year ago, JOI will continue discussions with the National Institute of Oceanography (NIO) to develop a strong academic link to India. Dr. Gopala Rao from the Institute sailed Leg 179. NIO is one of three government organizations which have interests close to ODP. The other two organizations are the Oil & Natural Gas Corporation (ONGC) and the Directorate General of Hydrocarbons (DGH). JOI is coordinating all efforts with a team of ODP individuals who have established contacts and experience in India.

BRAZIL

Efforts to recruit Brazil as an ODP member were rekindled this spring. The present goal is to bring in Brazil as an Associate Member or potentially form a consortium with neighboring countries (Argentina, Uruguay, Chile) which would significantly increase participation.

Judy McKenzie is serving as contact person to Professor Dr. Luiz Martins, CECO-IG-UFRGS and to Dra. Marilia Giovanetti de Albuquerque, Chair, Division of Marine Sciences, Ministerio da Ciencias e Technologia - MCT. They have received information about Associate Membership and ODP background materials.

Judy will work in collaboration with the EXCOM international committee, JOI, and Jamie Austin who will travel to Brazil for the Intl AAPG fall meeting. JOI will follow-up on the work that was started with Petrobras in 1995.
9.1.3 UPDATE ON PROGRESS TOWARDS MUTUALLY BENEFICIAL PARTNERSHIPS WITH INDUSTRY

Action Sought:

EXCOM is asked to note that action to explore the potential of a mutually beneficial partnership with industry, along the lines of the Moore initiative, has been delayed because of the flux in JOI staff since the last EXCOM meeting.

JOI PRELIMINARY RESPONSE

JOI plans to explore potential partnership activities with industry in two directions of mutual benefit: scientific research needs and technological development.

As reported at the last EXCOM, Ted Moore (JOIDES SSEP) proposed a strategy for initiating scientific collaboration with the US oil industry. The offshore oil industry is currently in a growth phase and future interests lie in areas of deep water. Therefore, it is timely to pursue collaborative efforts with industry now. The strategy includes a newly-formed oil company consortium that will take an active role in advisory planning of ODP, focusing on scientific research areas of mutual benefit. The suggested yearly contribution is $3M. The ODP scientific themes of mutual interest, initially identified, are related to fluid flow and the deep biosphere. JOI will pursue this collaboration and, once it proceeds, other scientific themes of mutual interest will likely be identified.

In September, the Drilling Engineering Association (DEA), in collaboration with the U.S. Mineral Management Service (MMS) and others, organized an industry workshop to identify the most important technical challenges faced in deep water drilling (600 - 2600 m). Four of the top five challenges identified by industry are geological/geotechnical issues related to pore pressure and fluid flow. Technologies that currently exist within ODP and those that could readily be adapted for the JR have good potential for collaborative applied research initiatives with industry and would have minimal impact on the scientific mandates of the Long Range Plan. JOI, with TAMU, will pursue potential collaborations.
9.1.4 GAS HYDRATES - ODP PARTNERSHIP POSSIBILITIES

Action Sought:

EXCOM is asked to note and comment on the opportunities for ODP to collaborate in gas hydrate research that have been identified by JOI, and to advise JOI on how to proceed with these partnerships.

Background:

Four opportunities have recently arisen for ODP to collaborate in gas hydrate research.

1. The first is U.S. Senate Bill S 1418, the Methane Hydrate Research and Development Act of 1997.
2. The second is the development of a U.S. Department of Energy Program Plan on gas hydrates that mentions NSF, ODP, the US Geological Survey, and others.
3. The third is a letter (enclosed) to the ODP Director from Kuldeep Chandra, the Executive Director (R&D) of the Oil and Natural Gas Corporation Limited (ONGC) at the Keshava Deva Malivya Institute of Petroleum (KDMIPE).
4. The fourth is a collaborative drilling effort involving the Geological Survey of Canada and the Japanese National Oil Company (JNOC), which includes a gas hydrate test hole.

1 U.S. Senate Bill S 1418, the Methane Hydrate Research and Development Act of 1997.

The US Senate Energy Subcommittee on Energy Research, Development, Production and Regulation held a hearing on May 21, 1998 on S. 1418, the Methane Hydrate Research and Development Act. The bill (introduced by Sen. Akaka, D-Hawaii) creates a program within the Department of Energy, that will be run in partnership with the Departments of Defense and Interior, to conduct research on methane hydrates. Witnesses included Robert Kripowicz (DoE-Fossil Energy), Tim Collett (USGS), Charles Paull (U of North Carolina) and Arthur Johnson (Chevron), all of whom were most supportive of the legislation. Kripowicz described activities within the Administration to develop a program in parallel to that proposed by S. 1418. Responding to a recommendation of the President's Council on Advisors on Science and Technology for a major initiative to evaluate the production potential of methane hydrates, DoE has conducted two program development workshops. DoE has posted a draft program plan on the web and is soliciting comments (http://www.fe.doe.gov/remarks/hydrate_052198.html).
ADM Watkins submitted a statement (TAB 13) for the hearing recommending that (1) the bill be amended to include NSF in the decision-making process, and that (2) the Energy Committee consider using the National Oceanographic Partnership Program as an implementing mechanism for any new gas hydrate program. His statement has been provided to the CORE Public Policy Committee for their information.

2. **U.S. Department of Energy Program Plan on Gas Hydrates**

DoE has posted a draft program plan on the web and is soliciting comments.


The DoE draft program plan for gas hydrate research is currently being reviewed by JOIDES panel and committee members and their collective comments will be synthesized by the JOI office before being sent forward to DoE.

3. **Letter (enclosed) to the ODP Director from Kuldeep Chandra, the Executive Director (R&D) of the Oil and Natural Gas Corporation Limited (India).**

Dr. Chandra writes to say that the ONGC has started R&D work on marine gas hydrates with KDMIPE and that the Indian government has launched a National Gas Hydrate Program with ONGC as a member organization. An extensive sampling program is planned by the ONGC/KDMIPE in the offshore areas and Dr. Chandra wishes to "explore the possibilities of collaboration with [the] ODP." Dr. Chandra would also like to know the "...modalities and financial implication for carrying out such a program..." 

Kuldeep Chandra writes to say that the ONGC has started R&D work on marine gas hydrates with KDMIPE and that the Indian government has launched a National Gas Hydrate Program with ONGC as a member organization. An extensive sampling program is planned by the ONGC/KDMIPE in the offshore areas and Chandra wishes to "explore the possibilities of collaboration with [the] ODP". Dr. Chandra would also like to know the "...modalities and financial implication for carrying out such a program...". JOI's response letter is enclosed.

From: Kate Moran <moran@agc.bio.ns.ca> to Susan Humphris.

Susan,

I mentioned to you last week about the collaborative drilling program that is currently ongoing between the Geological Survey of Canada and the Japanese National Oil Company (JNOC). They just completed a gas hydrate test hole on the Beaufort Coast last week (completed to 800 m). JNOC’s goal is to drill for hydrates at Nankai. Seems like collaboration with ODP would be most appropriate. More info on our joint program can be found at: http://sts.gsc.nrcan.gc.ca/page1/hydrat/hydrates.html

Cheers,
kate
JOIDES Gas Hydrates Program Planning Group

Charlie Paull/Chair

Overall Goal
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.
STATEMENTS ON INTRODUCED BILLS AND JOINT RESOLUTIONS
(Senate - November 07, 1997)

THE METHANE HYDRATE RESEARCH AND DEVELOPMENT
ACT OF 1997

Mr. AKAKA. Mr. President, on behalf of myself and Senators Craig and Landrieu, I am introducing the Methane Hydrate Research and Development Act of 1997.

Methane hydrate is a methane-bearing, ice-like substance that occurs in abundance in marine sediments. It is a crystalline solid of methane molecules surrounded by a structure of water molecules.

Methane hydrates are stable at moderately high pressures and low temperatures and contain large quantities of methane. One unit volume of methane hydrate contains more than 160 volumes of methane at standard temperature and pressure.

Methane hydrates are found in deep ocean sediments. Significant quantities are also found in the permafrost of Alaska, Canada, and Siberia.

Despite their potential as an energy resource, methane hydrates have not received the attention they deserve. We are only beginning to understand the magnitude of this potential resource. The amount of methane sequestered in gas hydrates is enormous. Worldwide estimates range from 100,000 trillion cubic feet to 270 million trillion cubic feet. Locations of known methane hydrate deposits within the United States include the Arctic, the seabed adjacent to northern California, the Gulf of Mexico, and the Eastern Seaboard.

A conservative estimate of deposits under U.S. jurisdiction is 2,700 trillion cubic feet to seven million trillion cubic feet of gas. A recent U.S. Geological Survey analysis indicates the presence of over 500 trillion cubic feet of methane at the Black Ridge site off the coast of Carolinas alone. When you consider that current U.S. consumption is less than 25 trillion cubic feet of natural gas per year, you begin to appreciate the magnitude of this energy resource.
The U.S. energy outlook is perilous at best. Our dependence on imported oil is steadily increasing. Soon we will import over 60 percent of the oil we consume. Air pollution is a persistent problem. We are spending enormous resources to improve air quality. Global climate change poses a looming challenge. With these concerns in mind, it is easy to recognize the importance of methane hydrates.

Methane hydrates are a strategic resource because they contain huge amounts of methane in a concentrated form. Extracted methane from hydrates represents an extraordinarily large energy resource and petrochemical feedstock. Methane is less polluting than other hydrocarbons because of its higher hydrogen-to-carbon ratio. Given the concerns about global climate change, a transition to methane as an energy resource is an attractive solution.

The U.S. is not doing enough to explore this viable energy source. Other countries, primarily Japan and India, have aggressive programs to develop methane hydrates. Japan has launched an exploration project for methane hydrates in its surrounding waters. The Japanese National Oil Corporation is conducting a seismic survey off Hokkaido Island and will drill test wells in two locations in 1999. Commercial production is planned for 2010. About six trillion cubic meters of methane hydrates can be found in the seabed near Japan. Recovery of one-tenth of this reserve could yield about 100 years supply of natural gas for Japan.

As part of its plan to boost natural gas resources, the Oil Industry Development Board of India has earmarked $56 million for a program of methane hydrates research and development. We cannot be left behind these and other nations in the race to develop this important energy resource.

Science News recently published an article summarizing the hopes and hazards associated with methane hydrates. Mr. President, I ask unanimous consent that a copy of this article be printed in the Record.

This is an exciting area of research and of new knowledge. It has an enormous payoff, not only for our energy security, but also for the global environment.

My bill establishes a small research and development program with the potential for major payback. It would direct the Department of Energy to conduct research and development in collaboration with the Naval Research Laboratory and the U.S. Geological Survey. The Secretary of Energy would also consult with other Federal and State agencies, industry, and academia. It directs the Department to conduct research on, and identify, explore, assess, and develop methane hydrate resources as a source of energy. It also directs the Department to develop technologies needed to develop methane resources in an environmentally sound manner. It provides for research to develop safe means of transportation and storage of methane produced from methane hydrates. To alleviate the concerns related to releases of methane, the legislation directs
the Department to undertake research to assess and mitigate hydrate degassing, both natural and that associated with commercial development. It requires the Department to develop technologies to reduce the risk of drilling through the gas hydrates. And finally, it provides for the training of scientists and engineers that would be needed for this new and exciting field on endeavor.
DRAFT

METHANE HYDRATES PROGRAM PLAN

U.S. Department of Energy
Office of Fossil Energy

April 1998

Executive Summary

In the near term, natural gas is expected to take on a greater role in power generation and transportation because of increasing pressure for cleaner fuels and reduced CO2 particulate, sulfur oxides and nitrogen oxides production. Gas demand is expected to also grow throughout the first half of the 21st century because gas may have an expanded transition role as a transportation fuel or a competitive source of transportation liquid fuel (gas-to-liquids conversion) and hydrogen for fuel cells.

Methane production from hydrates can contribute low cost natural gas to satisfy domestic demand. As much as 200,000 trillion cubic feet (Tcf) of methane may exist in hydrate systems in the U.S. permafrost regions and surrounding waters, which is hundreds of times greater than the estimated conventional U.S. gas resource base of 1,400 Tcf. Even if actual reserves prove to be only a small fraction of these estimates, methane hydrate production could alter U.S. and world patterns of energy supply and consumption. Gas production from hydrates will also contribute to energy security and Federal revenues from royalties and lease rentals in the Outer Continental Shelf.

Methane hydrate is a methane bearing, ice-like material that occurs in abundance in marine and arctic sediments and stores immense amounts of methane. A cage of water ice molecules surrounds the gas molecule allowing high methane concentrations—one unit volume of methane hydrate can contain over 160 volumes of gas and less than one unit of water at surface pressures and temperatures. Methane hydrates are found on land in permafrost regions (Alaska) and within ocean floor sediments around the U.S.

A ten-year program, starting in 1982, at the Department of Energy (DOE) Morgantown Energy Technology Center (now the Federal Energy Technology Center, FETC) supported methane hydrate studies that: established the existence of hydrates in Kuparuk Field, Alaska; completed studies of 15 offshore hydrate basins; developed production models for depressurization and thermal production of gas from hydrates; and built the Gas Hydrate and Sediment Test Lab Instrument. The program was canceled as government policy shifted from long-term, high risk Research and Demonstration (R&D) to near-term
expansion and production R&D. Although DOE funding stopped, work has continued
at the U.S. Geological Survey (USGS), universities, other laboratories, and overseas.

In the past year, a renewed interest in methane hydrates has been driven by:

- Growing recognition of the need for increased supplies of cleaner domestic fuels in
  the middle 21st century;
- Expanded industry activities in the Arctic and deep offshore that have increased
  awareness and interest in hydrate formation, occurrence, and stability;
- Concern about global climate change, most recently accelerated by the Kyoto
  conference, has emphasized the need to understand the role of hydrates in global
  carbon cycles; Technological progress over the past few years indicates that research
  will proceed more rapidly than previously expected and with increased expectations of
  commerical production; and
- Increased International activity and significant spending in Japan and India points
  out the expectation of commercial production in the not-too-distant future.

A large, long-term research and development (R&D) effort will be required to turn the
potential hydrate resource into gas reserves while developing technologies to assure safe
petroleum operations in hydrate areas, and defining the role of methane hydrates in
global climate. This program plan sets out a 10 year R&D program that will produce the
knowledge and technology necessary for commercial production of methane from
hydrates by 2015 and address associated environmental and safety issues.

The program will aim to answer the questions:
- Where methane hydrates are located and in what quantities (Resource Characterization);
- How natural gas can be economically produced from methane hydrate deposits (Production);
- The role methane hydrates play in global carbon balances and atmospheric methane
  (Global Climate Change);
- The potential impacts of hydrates on conventional hydrocarbon operations in the
  Arctic and offshore Gulf of Mexico (Safety); and
- The impact of hydrate deposits on submarine landslides and sediment collapse
  features (Seafloor Stability).

**Federal Role**

Fossil fuels play a vital role in the U.S. economy-about 7%-8% of our Gross Domestic
Product goes directly to purchase power and fuels. With the Nation expected to increase
its energy consumption by over 30% by 2020, the contribution of fossil fuels to the U.S.
energy mix will grow from today's 85% to 90%.

Many analysts believe there will be a switch from growth to decline in oil production not
only in the U.S., but worldwide in the early 21st century. The key issue in the national
policy debate is how the U.S. prepares for the transition to the post-oil economy,
particularly in the transportation sector. If advanced technologies for converting natural gas to liquid fuels can be made profitable and scaled up, gas could replace oil as the next source of transportation fuel.

Federal R&D can mean the difference between marginal improvements in technology and "quantum leaps" that can save consumers billions of dollars and accelerate public benefits. Using Federal R&D investments to make available new technologies 10 to 30 years before they would otherwise emerge from private sector R&D can save consumers billions of dollars, make national environmental choices easier, and strengthen the Nation's energy security. Methane hydrates research, for example, has no immediate economic payoff to the private sector. Federal R&D is the only way this type of research can be done in the U.S. Furthermore, the Federal Government has a primary role to enhance the value of Federal lands. Virtually all the known methane hydrate resource exists in Federal waters of the Outer Continental Shelf. Federal methane hydrate R&D is recommended by three policy documents:

- The DOE Comprehensive National Energy Strategy proposes this methane hydrate program as part of the effort to expand future energy choices, pursuing continued progress in science and technology to provide future generations with a robust portfolio of clean and reasonably priced energy sources.
- The Energy Research and Development Panel of the President's Council of Advisors on Science and Technology in its 1997 report, "Federal Energy Research and Development for the Challenges of the Twenty-first Century," recommends that the DOE Office of Fossil Energy (FE) expend $44 million over five years for methane hydrate R&D.
- Senate Bill #1418, introduced into the Senate on November 7, 1997, would authorize methane hydrate research by DOE-FE for the identification, assessment, exploration and development of methane hydrate resources.

**Research to Achieve Program Goals**

**Goal 1: How Much?** Determine the location and sedimentary relationships of methane hydrate resources to assess their potential as a domestic and global fuel resource. Resource characterization R&D will focus on collecting data and conducting geologic, hydrologic, microbiologic, and thermodynamic studies to determine the location, volume, physical character, and methane flux of hydrate deposits in the U.S. and the world. Laboratory studies, computer modeling, and field validation will assure accuracy and predictive capability for application to other program areas. The program will also develop specialized seismic, geophysical, well logging, and high-pressure technology.

**Goal 2: How to Produce It?** Develop the knowledge and technology necessary for commercial production of methane from oceanic and permafrost hydrate systems by 2015. Production R&D will include: basic studies of well production test data; reservoir and process engineering; economic analysis; and modeling, laboratory studies, and field tests of conventional and alternative production technologies.
Goal 3: How to Assess Impact? Develop an understanding of the dynamics and distribution of oceanic and permafrost methane hydrate systems sufficient to quantify their role in the global carbon cycle, and climate change.

Global climate change R&D will focus on dispersed methane hydrate occurrences exposed at the seafloor to identify mechanisms and processes of hydrate dissociation on the seafloor. Data collection and research will determine the impact of global warming on hydrate dissociation and apply the data to climate models.

Goal 4: How to ensure safety? Develop an understanding of the hydrate system in near-seafloor sediments and sedimentary processes, including sediment mass movement and methane release so that safe, standardized procedures for hydrocarbon production and ocean engineering can be assured.

Safety and seafloor stability R&D will determine risk factors, develop models, predictive tools, and mitigation techniques to assure safety in conventional hydrocarbon production and transportation. The program will also investigate the potential for seafloor subsidence from hydrate production and develop subsidence mitigation technologies.

Program Benefits

Although the major program benefits will be seen 10 to 15 years from the start of the effort, there will be numerous early benefits, including:

- Identification of the hydrate risk to conventional oil and gas operations;
- Assessments of the location and volume of methane hydrate resource for energy policy decisions;
- Improved data on ocean and atmosphere thermal and chemical changes for use in global climate modeling; and
- Improved seismic and other geophysical tools for use by the petroleum industry, military, and others.

Long-term benefits will primarily be a suite of technologies necessary for commercial production of methane from arctic and marine hydrates. Other long-term benefits will be improved global models of climate change, and detection and mitigation technologies to assure safe hydrocarbon production and ocean engineering in areas underlain by hydrates. Increasingly refined assessments of U.S. and global hydrate resources will continue to assist energy planners in government and industry.

Program Management

The Methane Hydrates Program will marshal the resources of the petroleum industry, academia, the National Laboratories, and other Federal agencies with concurrent interests in methane hydrate research such as the Minerals Management Service (MMS) and National Science Foundation (NSF). The DOE-FE Office of Natural Gas and Petroleum Technology will have the lead responsibility for program management. Government agencies including the USGS, Naval Research Laboratories (NRL), as well as the DOE Office of Energy Research (ER) and FETC will be actively involved in program design,
oversight, and funding. A Management Steering Committee composed of these government agencies and representatives of industry (Natural Gas Supply Association, Gas Research Institute, and American Petroleum Institute), and MMS will:

- Define program goals and responsibilities;
- Ensure that work under the methane hydrates program will complement other work conducted by federal, state and commercial organizations;
- Maintain a dialogue with private sector organizations;
- Periodically review program direction, program accomplishments and the relationship of the program to natural gas market conditions; and
- Assure that funding from multiple agencies will not be redundant and will be consistent with each program's mission.

A Technical Steering Committee, composed of organizations and Federal agencies that are funding R&D activities, will be responsible for: program planning and budget development; grant and contract award and oversight; project review; developing and tracking program and project performance measures; and stakeholder outreach.

Industry and other research organizations, such as the NSF, are currently funding methane hydrate R&D efforts and are expected to use their own funding mechanisms to make substantial contributions to this program's goals.

Extensive stakeholder involvement in the development and ongoing assessment of this program will be consistent with the requirements of the Government Performance and Results Act of 1993 (GPRA). As required by GPRA, the program will develop 5-year strategic plans showing goals and objectives and how they will be achieved, a description of key external factors that could affect achievement of these goals, and annual program evaluations to be used in establishing or revising goals and objectives.

Peer review will be implemented through the National Research Council Board on Energy & Environmental Systems in order to assure that R&D projects represent high quality science, are cost effective, and achieve intended objectives.

Stakeholder input into this plan from two DOE-sponsored workshops is documented in the appendices of this document.

**Industry Role**

Until recently, the emphasis of industry research on gas hydrates has focused on the production and transportation problems of hydrate formation in well bores and pipelines. More recently, industry R&D has started to focus on hydrates for gas supply.

Industry is expected to expand its support of university and National Lab research and contribute funding for other research as well as provide well bores and other facilities for sample collection monitoring and production testing. Industry is also expected to
contribute seismic and other subsea data originally acquired for oil and gas prospecting, which can be reinterpreted for shallow horizons of interest for hydrates.

**International Cooperation**

Japan, India, Canada, England, Brazil, Norway, and Russia currently have active research programs in methane hydrate. In fact, both India and Japan have announced plans to spend $50 million on hydrate production R&D. Several countries are expected to propose cooperative work and scientific exchange, as the U.S. program becomes active. DOE will explore opportunities to leverage its research through cooperative work with countries that have active R&D programs.

**Budget**

Program components and schedule have been assessed at four potential funding levels. At the level of $1 million per year, an integrated program could not be developed. Only basic resource characterization studies could be supported and none of the program goals would be attained. At the level of $5 million per year, development of the technology necessary for commercial production would require 25 years, and global climate change and seafloor stability R&D would not be supported. Funding of $10 million per year would require 20 years to achieve all of the program goals. Federal funding of $20 million per year would allow all program goals to be met by 2010.
To,
The Director
Ocean Drilling Program
Texas A & M University Research Park
1000 Discovery Drive, College Station
TEXAS 77845 – 9547, USA.

Sub :- Gas hydrate sampling work in Indian offshore areas.

Sir,

Oil & Natural Gas Corporation Limited (ONGC), the National oil company in India has started R&D work on marine gas hydrates at Keshava Deva Maliviya Institute of Petroleum Exploration (KDMIPE), Dehradun. At present a small group of geo-scientists are working on available seismic data to delineate gas hydrate prone areas in deep Indian offshore areas. Some encouraging results have been obtained.

Now, we wish to carry out extensive sampling program for gas hydrates in the offshore areas. We wish to explore the possibilities of collaboration with your Ocean Drilling Program (ODP) to carry out such sampling. Kindly let us know the modalities and financial implication for carrying out such program so that further action can be taken at our end.

Recently Government of India has launched a National Gas Hydrate Program and ONGC is the member organisation mainly responsible for seismic data acquisition, processing, interpretation and for actual drilling and sampling of gas hydrates.

With regards.

Kuldeep Chandra
Executive Director (R&D)
KDMIPE, Dehradun
24 April, 1998

Mr. Kuldeep Chandra
Executive Director (R&D)
KDM Institute of Petroleum Exploration
9 Kaulagarh road
Dehradun 248 196
INDIA

Dear Mr. Chandra:

I am writing in response to your letter to the Ocean Drilling Program concerning gas hydrate sampling work in Indian offshore areas.

The Ocean Drilling Program (ODP) is an international partnership of scientists and research institutions organized to explore Earth's history and structure as recorded in the ocean basins. ODP provides sediment and rock samples (cores); shipboard and shore-based facilities for the study of these samples; downhole geophysical and geochemical measurements (logging); and opportunities for special experiments to determine in situ conditions beneath the seafloor.

ODP is funded by the US National Science Foundation (NSF) and by international partners, which currently include: the Australia/Canada/Chinese Taipei/Korea Consortium for Ocean Drilling; the European Science Foundation Consortium for Ocean Drilling (representing twelve countries); France; Germany; Japan; the United Kingdom; and the People's Republic of China. The ODP Council, representing all of these partners, provides a forum for consultation among the NSF and other national funding agencies.

Gas hydrate research has been a long standing interest within the ODP community. ODP and its predecessor, the Deep Sea Drilling Program, were instrumental in providing the first samples of gas hydrates from the deep ocean. Within the present scientific planning structure for ODP there is a special planning group tasked with developing research strategies to study gas hydrates.

In your letter you ask about "modalities and financial implication" for carrying out a research program in the Indian offshore areas. As noted above financial support for ODP comes from many national agencies. These contributions reflect a long term commitment to scientific ocean drilling. Privileges that come with this commitment and financial support include membership on science planning committees; participation in drilling
expeditions as shipboard scientists and co-chief scientists; and access to technology developments of the program. Privileges do not include a guarantee that specific drilling program will be completed.

All drilling expeditions are based on proposals submitted to the program from the international science community. These proposals present the important scientific objectives of concern and drilling strategies to address them. Proposals must also include all supporting geophysical data to evaluate drilling locations for both safety as well as to evaluate how appropriate each site is to addressing the scientific goals of the program. Thus, it is possible for a proposal to be submitted to the program to study gas hydrates in the Indian offshore region.

What I have described is the present planning and financial status of the program. However your specific request raise new issues for ODP in terms of new funding strategies and the entry of the program into more applied research areas. How this will develop is uncertain. For now, it would be very exciting to have the Indian geosciences community become a full participating member in the Ocean Drilling Program, and I would be most interested in continued discussions with you concerning your specific interest in the program.

Sincerely,

Nicklas G. Pisias
Interim Director Ocean Drilling Program.

e-mail: npisias@brook.edu
        pisias@oce.orst.edu
9.1.5 EXCOM PUBLIC AFFAIRS SUBCOMMITTEE UPDATE

The EXCOM subcommittee for Public Affairs is composed of Nowell, Orcutt, Biersdorf, and Feary. Pamela Baker-Masson, Public Affairs Director at JOI, Susan Humphris, the SCICOM Chair, Bob Detrick, the EXCOM Chair, and the Director of JOI serve as permanent liaisons to the EXCOM subcommittee for Public Affairs.

ODP PUBLIC AFFAIRS
EXCOM Six Month Report
January - June 1998

PORT CALLS

*Cape Town, South Africa* - *(April 98)*. In collaboration with the University of Cape Town (UCT), ODP Public Affairs organized VIP ship tours on Tuesday, 14 April. Over 55 guests from the academic community, industry, diplomatic community (Ambassadors from France and Finland, Consul General from the US and consul representatives from Botswana and Mozambique), and local businesses toured the drill ship and/or attended a reception. Remarks were made by Dr. Mamphela Ramphele, UCT Vice Chancellor, Professor John Martin, UCT Deputy Vice Chancellor of Research, Paul Dauphin, NSF and the ODP presentation was delivered by Jeff Fox, ODP.

The following day, media were invited to tour the ship with high school students and interview scientists. ODP received favorable television, wire service and newspaper coverage. UCT invited science teachers and students from three high schools to tour the ship and meet ODP scientists. The tours were extremely well received by approximately 130 students.

*Sydney, Australia* - *(Aug. 98)*. In conjunction with the Australian ODP office, a public affairs plan has been developed for the upcoming port call. Activities will include VIP events, public tours, scientific presentations and media outreach. As emphasis will be placed on reaching elected officials and decision makers, Public Affairs will support the Australian office to reach Sydney based officials and will also initiate contact with the diplomatic community in Washington, DC. A science journalist from "The Australian" newspaper will be transported to the JR for a brief visit during Leg 180. Please see following schedule for Public Affairs port call events:
Tuesday, 11 August
Noon-Press conference aboard the ship (time tentative based on clearance from customs
and immigration officials).
3 p.m.-AusSCICOM meeting at the University of Sydney

Wednesday, 12 August
Noon-VIP ship tours. 100 invited guests
1:30 p.m.-Lunch served at the Garden Island in the gardens overlooking the harbor.
3 p.m.-VIP tours resume
6 p.m.-Geological Society of Australia meeting aboard the ship. 50 people expected.

Thursday, 13 August
9 a.m. - 4 p.m.-Science Conference at the University of Sydney. Attendees will also be
leaving the conference throughout the day for ship tours. Estimated 400 guests.

Friday, 14 August
9 a.m. - 4 p.m.-Ship open to High School and University student tour groups. General
public tours will not be available. 700 students expected to tour ship.

Wellington, New Zealand - (Oct. 98) In response to a request from the US Embassy,
Public Affairs is exploring the possibility of organizing VIP tours for the Diplomatic
community during the port call.

Hong Kong (April 1999) & Tokyo (June 1999) - Public Affairs will begin planning for
these two port calls in the Fall.

30TH ANNIVERSARY OCEAN DRILLING
Committee - Public Affairs has organized a 30th Anniversary Committee to assist with
the planning and management of the events scheduled during the Anniversary year. The
committee includes representatives from JOI, TAMU, LDEO, JOIDES office, and NSF.

Calendar - A 17-month calendar is under production to commemorate the Anniversary.
The 30th Anniversary Calendar will highlight significant DSDP and ODP discoveries,
research and the individuals who have made major contributions to ocean drilling. The
calendar will have stunning photos and illustrations in four-color and be ready by August.
The plan is to print 5,000 calendars for distribution throughout the ODP community,
funders, member countries, and decision makers.

Other Events - The committee has also agreed to implement the following ideas/events:
write and place popular science articles in publications such as EARTH; TAMU will
organize a staff recognition event to honor individuals who have been with the program
since its inception; produce T-shirts and other promotional items; and organize a
Washington educational/outreach event for late Fall.
PRESS MATERIALS
Press Releases - Public Affairs developed and distributed news releases for Legs 177, 178, 179 and 180. Additional news releases included the announcement of The People's Republic of China joining ODP, the appointment of Kate Moran, and a media tip sheet highlighting ODP research at the Spring AGU meeting.

Public Affairs is in the process of reorganizing the news release distribution lists and converting to electronic distribution. Media and internal ODP lists are being updated. The change will result in cost-savings (approx. $700) for the TAMU public affairs budget and will expedite the distribution significantly. Electronic conversion should be completed by August. Public Affairs is also exploring the use of professional electronic distribution services such as EurekAlert! for the most important releases. There will remain a small percentage of news releases that will continue to be faxed or mailed.

The Spanish version of “A Planet In Motion” has been completed and the German version is expected to be finished by early summer.

The ODP flyer was printed in time for the Cape Town port call. The German version will be completed in June.

Upon review of the available ODP photos and slides, Public Affairs has initiated an overhaul of ODP artwork. ODP photographers have been shooting new photos and slides and will continue to do so on the next several expeditions. Public Affairs will assemble a new slide set and photo package for use by the community. These materials will be ready at the end of September.

Public Affairs is also redoing the basic ODP fact sheet and other background materials used in the press kit. These materials will be made available on the web site upon completion. The first fact sheets will be ready by the end of July.

CONFERENCES
American Association of Petroleum Geologists (AAPG) - Public Affairs developed and mounted an ODP booth at the AAPG meeting (May 98). The goal was to create a ‘presence’ at this industry conference as this is a target audience for ODP. Jeff Fox, Jamie Austin (Leg 174A) and Charles Paull (gas hydrates) attended the meeting and assisted in the ODP booth. Austin and Paull’s science was highlighted in the booth and their interaction with the conference attendees was invaluable. Contacts were made with industry publications, petroleum company representatives, and foreign and US govt. agencies. The initial evaluation from participants was that it was indeed worthwhile to mount a booth at AAPG and we should participate in next year’s meeting which will be held in San Antonio. Participation in these type of conferences will complement other industry initiatives as determined by the Director.
International Conference on Paleoceanography (ICP) - As directed by ODP management earlier this year, public affairs is developing an ODP booth for ICP this August in Lisbon, Portugal. The booth will highlight ODP research in the areas of micropaleontology, paleomagnetics and paleoceanography. ODP will use this opportunity to generate interest and locate new recruits among this community of scientists, to communicate ODP science, and publicize the Spring 1999 International Conference. The booth will be staffed by JOI, TAMU and ODP scientists.

American Geophysical Union (AGU) Fall Meeting - In collaboration with all subcontractors and the JOIDES office, Public Affairs will develop and mount the ODP booth for the Fall AGU meeting (Dec. 98). The booth will highlight the research and events of '98 and emphasize the 30th Anniversary of Ocean Drilling. Public Affairs will also work with officials in the press room. Plans are underway to host an ODP Union Session. When confirmed, Public Affairs will coordinate the publicity for the Session.

MISCELLANEOUS

The Discovery Channel aired a one-hour program on the extinction of dinosaurs called "And then there were none." The program's focus was Leg 165 and included interviews by Haraldur Sigurdsson and other members of the science party. The program first aired 28 April and a second time on 3 May.

The Oregonian published an article, 11 April, on the subject of Leg 183 and included interviews with Bob Duncan and Fred Frey. A sidebar article discussed scientific achievements excerpted from the "ODP Greatest Hits" brochure.

In collaboration with Woods Hole Oceanographic Institution (WHOI), ODP will participate in a film shoot for a series that is being produced by WHOI for public television. The film crew will rendezvous and board the JR during Leg 180 to interview scientists, technicians and crew members. The same crew will interview Admiral Watkins in June for a different program in the series.

The May issue of NATIONAL GEOGRAPHIC contained an article and Millennium supplement on the Physical World. The pull-out map featured an artist's rendering of the K/T Boundary core and additional information about ocean cores.

The May issue of SCIENCE TEACHER contains the K/T Boundary article and "Blast from the Past" poster insert. The backside of the insert contains several educational activities and resource/reference information. The magazine is distributed to over 27,000 high school teachers in the US and Canada. The insert contents will be made available to all member countries for their use.

Public Affairs collaborated with Canadian EXPO '98 officials and Robin Riddihough to complete the short interactive ODP video game that will be on display in the Canadian Pavilion at EXPO '98.
9.0 MANAGEMENT AND OPERATIONS REPORTS
9.2 ODP/TAMU MANAGEMENT REPORT

ODP/TAMU MANAGEMENT REPORT

EXECUTIVE SUMMARY

The last six months have been challenging for science operations at ODP/TAMU for a variety of reasons. Although both Leg 177 and 178 were a great success (see the JOIDES Office report), the hostile weather conditions in the far reaches of the Southern Ocean resulted in a loss of drilling time due to high winds, rough seas, and/or proximal icebergs. In addition, the inclement sea states contributed to the partial loss of the Lower Guide Horn which resulted in the curtailment of the Leg 177 science plan, restricted operating parameters during Leg 178, and an extended port call prior to the beginning of Leg 179 to effect repairs. More recently, we experienced logistic problems associated with supporting operations in a distant ocean when two containers bound for Cape Town and Leg 179 were misdirected by our shipping company to La Spezia, Italy prompting a major adjustment in the engineering and scientific activities scheduled for that leg. Moreover, continued high seas on Leg 179 compromised the hammer drill engineering experiment and reduced operational efficiencies during the drilling/casing of a hole at the NERO Ion site. Although the NERO operation was a success, the hole was not completed with sufficient time remaining to conduct a two ship seismic experiment that had been scheduled with the Sonne. The last six months have been a reminder that there are additional risks when working at high latitudes and in distant oceans, these risks can be minimized with careful preparation, but they can’t be avoided.

Other issues of interest that have been a focus of attention are referred to below and organized under the appropriate functional department.

Management: Although a draft of the contract extension for the operation of the JOIDES Resolution for the next five years was completed last November with Overseas Drilling Limited (ODL), the ODL Board of Directors chose to request small, but substantive, modifications to the draft at their meeting in March. Changes to the original draft have been made after further discussions with ODL and a revised document is waiting final approval. Working with ODL, the workscope for the scheduled FY99 dry dock has been defined and the procurement process for long lead time components is only just commencing because of delays caused by contract negotiations. NSF is contributing 6 million dollars (3 million in FY98 and 3 million in FY99) for ship repairs and refurbishments. The workscope has been designed accordingly with an understanding that any costs in excess of 6 million dollars will be for ODL’s account. In addition, approximately 300 thousand will be spent by the Program for lab stack refurbishments.
Drilling Services: The hammer drill tests were badly compromised by excessive ship heaving which caused large fluctuations in loading at the drill bit/rock interface, and by the loss of equipment and time caused by the shipping problems experienced prior to Leg 179. Nevertheless, the hammer drill with a crown drilling bit did achieve impressive penetration rates (8 m in 1.6 hours), even when operated at less than optimal pressures. The hammer drill engineering results must be fully evaluated and digested before a plan for further testing and development can be defined, but the high penetration rates in gabbro are impressive and suggest that the system is as capable in the marine realm as it has been shown to be in subaerial environments.

Information Services: ODP/TAMU has taken over the responsibility for all the JANUS source and object code. The product that Tracor delivered has proven to be robust and the transition of responsibility to ODP from Tracor has gone well. The JANUS application continues to have corrections made to small problems as they are encountered. Overall the system continues to function well and future enhancements will be made to improve the user interface. Although the funds to support a major project to migrate the historical ODP data are not available, reallocation of resources within IS permits the commitment of 1 FTE and a student worker to begin to integrate important data types with priorities established by SCIMP.

Publication Services: The transition to migrate from printed to electronic publication formats is well underway with products available for testing in CD-ROM and WWW formats. A beta group, consisting of members of the scientific community, has been established to provide feedback on design components. As the transition to electronic publication continues, a trend is developing that, if extrapolated into the future, suggests the Scientific Results volume for a given leg will shrink by as much as 75%. If this extrapolation is substantiated over the next six months to a year, we recommend the elimination of the Scientific Results volume and the creation of a WWW-based journal for data reports, synthesis papers and technical notes. The great advantage of this product is that papers would be accepted for peer review at any time after the cruise ended and would be published on the WWW after final acceptance (instead of four years postcruise) and the distribution of leg-related postcruise science would be expedited and widely disseminated. This notion will be presented at the appropriate JOIDES panel meetings for deliberation during the summer of 1998.

MANAGEMENT

Status of Contract Extension with ODL

In November 1998, negotiations were completed with Overseas Drilling Limited (ODL) relative to the contract extension through September 2003 (the substance of these negotiations is summarized in the January 1998 EXCOM report). A draft contract modification was provided to the ODL Board of Directors in March 1998 for review and approval. The ODL Board requested that modifications be considered and two additional changes were made from previous agreed to changes. These involved adjustment of the inflation threshold from a minimum of five months to the original six months and use of
an employment compensation index (ECI) for 25% of the inflation index adjustment figure. Use of the consumer price index-urban (CPI-U) makes up the other 75% of the adjustment index. Using an ECI for 25% of the inflation escalator will result in an initial (FY99) increase estimated at $16,932 to the day rate and a five year total increase estimated at $115,520.

ODL and TAMRF have started the contract modification on their respective paths of approval. JOI has concurred with the modification and forwarded it to NSF. ODL provided the modification to their parent organization, SEDCO/Forex, requesting Board approval. We anticipate receiving decisions from NSF and SEDCO/Forex before the end of May.

**Dry Dock**

Maintaining the JOIDES Resolution's current American Bureau of Shipping (ABS) classification dictates that the vessel should undergo a major dry dock and hull inspection every five years. The process of classification must be satisfactorily completed for safety, operational, and insurance purposes.

During the basic dry dock/classification process (planned for autumn 1999), essential repairs and upgrades will also be performed, notably to the Automatic Station Keeping (ASK), the Data Management System (DMS), the drilling systems, and all propulsion systems.

**Ship Modifications**

The costing of the workscope tasks can only be estimated at this time because, until bids for major pieces of new equipment are received (i.e. ASK, DMS) or until a given project is started and the equipment in question opened up, the actual costs are impossible to predict. Therefore, the costs associated with these dry dock projects are conservative in that costs have been projected at the high end of the spectrum. Because of this approach, the workscope exceeds the 6 million dollar budget that we have agreed to with ODL. If some major projects turn out to be less expensive than forecast (i.e. ASK, DMS), all of the projected workscope could be achieved. Alternatively, if projects are as expensive as forecast, then lower priority tasks will not be undertaken. There is a contractual dry dock agreement in place with ODL that specifies the following: any overrun of the $6 million budget will be shouldered by ODL; the workscope is periodically reviewed by ODP as projects become better understood; any changes to the workscope proposed by ODL must be approved by ODP; and during dry dock ODP will have representatives from Drilling Services and Administration to provide technical and contractual oversight of the dry dock project. Moreover, in an effort to minimize the costs associated with dry dock activities, ODL will carry out as many workscope projects as possible utilizing the ship's crew prior to the dry dock.

Project priority will be given to ensuring the safety and seaworthiness of the vessel by adhering to the well-defined ABS requirements. Next in priority will be projects that focus on maintaining or improving the quality of the overall shipboard performance. Of high priority in this category is the replacement of the ASK system and an upgrade of the
thrusters and the DMS. The DMS controls the power distribution to equipment on the vessel. Also, maintenance of the JOIDES Resolution drilling systems is required to ensure the continuation of current coring capabilities. Finally, of importance but lower priority, improvements to the living quarters will take the form of noise reduction measures, room upgrades, and improved ventilation and air conditioning.

There is one additional project that may be implemented if certain issues can be resolved. ODL is investigating on behalf of ODP the possibility of installing a synchronous generator to achieve an improved power factor during coring operations. Fuel savings are projected to be considerable (approximately $200,000 per year). ODP and ODL are presently trying to negotiate an agreement whereby ODL would pay for the modification and then be reimbursed out of fuel savings recognized in the out years.

**Identified dry dock projects with cost estimates:**
- New Automatic Station Keeping Station: $1,560,000
- New Data Management System: 998,000
- Thrusters/Propulsion/Steering/Mooring: 569,000
- Environmental Equipment/Installation: 50,000
- Hull, Piping, and Shipboard Services: 1,054,000
- Drilling and Electrical Equipment: 339,000
- Classification: 80,000
- Lifesaving and Firefighting: 110,000
- Electrical Switchgear/Motors/Generators: 154,000
- Cranes: 305,000
- Shipyard Services and Supervision: 540,000
- Living Quarters: 626,000
- Radio Equipment: 78,000
- Lab Stack: 21,000
- Total: $6,484,000

**Automatic Station Keeping** - The ASK system is the brain of the dynamic positioning system, gathering signals from various sensors monitoring the position of the vessel and from sensors that measure the external forces working against the vessel which cause her to move off of location (i.e., wind and current). The ASK system then sends orders to the thrusters and propulsion system so the vessel stays on location without being attached to the seabed. While the present system remains functional, it is obsolete by today's standards. In order to maximize our chances for reliable operations for another five years, it is important to replace the old unit with a new system that will be more reliable and will operate much more efficiently saving fuel and reducing wear on equipment.

**Data Management System** - The DMS monitors and controls the distribution of power to the vital pieces of equipment on the vessel (i.e., propulsion equipment, thrusters, drilling equipment, etc.). The JOIDES Resolution is equipped with a DMS that is obsolete by today's standards and is neither effective, nor reliable. In order to ensure continued operation of the system and gain improved reliability for another five years, a
new DMS will be required. A new DMS, used in conjunction with a new ASK system, will translate into much better reliability and in some situations improved fuel economy.

Thruster, Propulsion and Steering - The 12 thrusters on the JOIDES Resolution are the units that, in conjunction with the main propulsion, allow the vessel to be dynamically positioned by being able to provide the necessary thrust in any direction. In order to maintain the ability to dynamically position the vessel, the thrusters must be thoroughly inspected and serviced to ensure their continued service.

Environmental Equipment/Installation - The costs associated with acquiring and installing environmentally compatible equipment required by regulations for vessels operating in environmentally sensitive areas (i.e. Antarctic). In this regard, a new garbage disposal system has been installed which exceeds environmental requirements for all marine operations.

Hull, Piping, and Shipboard Services - The hull, associated tanks incorporated into the hull, and the pipework allowing for the transfer and flow of the various fluids throughout the vessel are main components of the vessel. The hull of the JOIDES Resolution is still in good condition after 20 years of service and, if properly maintained, another 15 to 20 years' life expectancy is reasonable. It is inevitable, however, that some corrosion will occur on various sections of the hull, tanks, and pipework. Various sections have been repaired as required over the years; however, it will be very important to thoroughly inspect, repair, and protect all sections of the vessel exposed to the elements so that further corrosion does not reduce the life of the vessel.

Drilling and Electrical Equipment - The equipment directly associated with the drilling function will be inspected, serviced, and maintained as required to ensure that it will be functional for another five-year contract. The electrical equipment requiring servicing will be the majority of the large electrical motors and the generators.

Cranes - The vessel has three cranes that will be 20 years old and require servicing, repair, and replacement of various components to ensure that they can continue to be operated safely.

Shipyard Services - These costs are associated with utilizing the services of the shipyard that are not directly associated with any one project but are associated with all of the work performed. It is also the cost of additional supervision and engineering that will be required to ensure that the project is performed properly.

Living Quarters - Improvement to the living quarters will concentrate on noise reduction, room upgrades, improvements/replacement to the ventilation and air conditioning systems, and replacement of the fire detection system.
Science Modifications

ODP is responsible for all laboratory stack maintenance and modifications in its FY99 budget and has set aside $309,042 for this purpose.

ODP’s Marine Laboratory Technicians will be carrying out as many projects as possible during the dry dock and associated transits under the project management of a Laboratory Officer.

The following lab stack projects have been proposed by Science Services:
- Refurbish the sonar dome and replace the defective 12-kHz transducer.
- Maintenance of aft transducer.
- Lab stack foundation access to allow visual inspection and possible foundation bolt replacement to the lab stack. The access panels will also allow for future foundation strengthening.
- Installation of a riser hold lift to increase the speed, efficiency, and safety of loading and unloading core and other materials from the riser hold.
- Modification of the core laboratory to increase the speed and efficiency of core processing in the core lab and to provide adequate ventilation allowing for the safe degassing of potentially hazardous cores in the core lab.
- Blasting and repainting the fantail winch.
- Fume hood replacement in the chemistry laboratory.
- New cabinets and countertops in the chemistry lab.
- Conversion of the second core reefer, currently used to store supplies including chemicals, batteries, and photographic supplies, back to a core-only storage area. Alternative storage for the chemicals can be arranged in the second look lab. The photoshop requires roughly 130 cubic feet of refrigerated storage, which can be supplied by the acquisition of two refrigeration cabinets, which could also be housed in the second look lab.
- Refurbish the Sea Horse hydraulic motors for the seismic streamers.
- Removal of the Doppler sonar.
- Addition of mezzanine decks in the riser hold.
- Reconfiguration of the riser hold mezzanine decks to increase and centralize storage areas on the JOIDES Resolution. All mezzanine decks would be directly accessible by the riser hold lift, thereby minimizing the manhandling of science supplies and cores by the Marine Laboratory Technicians.

Ship Operations

Ship operation costs are defined in terms of:

- The number of ODP employees attending the dry dock and their travel and living expenses (not including salary). The figure quoted for Science Services presumes a full technical crew will not attend for the full dry dock period.
- Ship Operations - ODL costs including fuel, day rates, port call, and travel expenses for ODL.
Indirect cost savings during the dry dock will be realized by ODP. Savings will be achieved by the reduced fuel consumption by the ship and by a reduction in the ODL day rate to a standby day rate, saving $2,000 a day (standby rate as opposed to operating rate), which for 45 days would provide a total of $90,000.

Funding - Funding for ship operations will be at the expense of ODP. NSF has agreed to contribute the $6 million necessary for dry dock activities to extend the current contract with ODL. The funding is split equally between FY98 and FY99.

It is currently estimated that the JOIDES Resolution will be in dry dock for 40 to 45 days. An additional seven days will be required for sea trials.

Public Information

Film Crew to board ship during Leg 180

Horizon Media is planning on sending a film crew to join the science party during Leg 180. The film crew will be arriving aboard the scheduled rendezvous boat leaving Papua New Guinea about 13 July. They will be aboard the ship for about three days collecting footage of scientists in the labs, crew working on the rig floor and individual interviews with various scientists, technicians and SEDCO/Forex crew members. Horizon Media is working with WHOI to produce a 10-part series exploring the work of scientists committed to tackling some of the most complex, but exciting, subjects involving our planet. The Ocean Drilling Program will be the focus of one program.

The Australian Science Reporter

A science reporter with The Australian, Graeme Leech, will be joining the film crew during the same rendezvous with the ship during Leg 180. Mr. Leech will interview Brian Taylor and selected other scientists for an article to be published in The Australian regarding Leg 180 science objectives and other ODP achievements. This article will help develop enthusiasm for the Sydney port call public relations activities.

Another potential opportunity is for a science reporter, Robyn Stutchbury working for "ABC Online Science", to sail from 23 July until the end of the cruise if berthing accommodations are available. This will be confirmed following Papua New Guinea naval officials requests for berths during Leg 180.

Sydney Port Call

The Australian ODP leadership requested that ODP move the port call from Townsville to Sydney providing them an opportunity to build support with Australian funding agencies by hosting several public relations activities. On Wednesday, 12 August, Australia will invite the Minister for Science/Resources/Environment, ambassadors from the U.S., Canada, Korea and Chinese Taipei, AGSO representatives, Naval officials and other government and science delegates to attend the VIP luncheon and ship tour. The following is a schedule of daily activities:
Tuesday, 11 August
Noon    Press conference aboard the ship (time tentative based on clearance from customs and immigration officials).
3 p.m.   AusSCICOM meeting at the University of Sydney

Wednesday, 12 August
Noon    VIP ship tours
1:30 p.m. Lunch served at the Garden Island in the gardens overlooking the harbor.
3 p.m.   VIP tours resume

Thursday, 13 August
9 a.m.-4 p.m.   Science Conference at the University of Sydney. Attendees will also be leaving the conference throughout the day for ship tours.

Friday, 14 August
9 a.m.-4 p.m.   Ship open to High School and University student tour groups. General public tours will not be available.

Saturday, 15 August
No scheduled activities.
**Operations Schedule**

The table below outlines the operations schedule of the JOIDES Resolution through December 1999.

**ODP Operations Schedule: April 1998 - December 1999**

<table>
<thead>
<tr>
<th>Leg</th>
<th>Area</th>
<th>Ports</th>
<th>Cruise Dates</th>
<th>Co-Chief Scientists</th>
<th>Staff Scientist</th>
<th>Staffing</th>
<th>Territorial Permission</th>
</tr>
</thead>
<tbody>
<tr>
<td>179</td>
<td>NERO/Hammer Drilling</td>
<td>Cape Town-Darwin</td>
<td>April-May 1998</td>
<td>Dr. John F. Casey</td>
<td>Dr. Jay Miller</td>
<td>Completed</td>
<td>Papua</td>
</tr>
<tr>
<td>180</td>
<td>Woodlark Basin</td>
<td>Darwin-Sydney</td>
<td>June-July 1998</td>
<td>Dr. Philippe Huchon</td>
<td>Dr. Adam Klaus</td>
<td>Completed</td>
<td>New Guinea</td>
</tr>
<tr>
<td>181</td>
<td>SW Pacific Gateways</td>
<td>Sydney-Wellington</td>
<td>August-September 1998</td>
<td>Dr. I.N. McCave Dr. Robert M. Carter</td>
<td>Dr. Carl Richter</td>
<td>Near Completion</td>
<td>New Zealand</td>
</tr>
<tr>
<td>182</td>
<td>Great Australian Bight</td>
<td>Wellington-Fremantle</td>
<td>October-November 1998</td>
<td>Dr. Albert C. Hine Dr. David A. Feary</td>
<td>Dr. Mitch Malone</td>
<td>Near Completion</td>
<td>Australia</td>
</tr>
<tr>
<td>183</td>
<td>Kerguelen</td>
<td>Fremantle-Fremantle</td>
<td>December 1998-February 1999</td>
<td>Dr. Millard F. Coffin Dr. Frederick A. Frey</td>
<td>Dr. Paul Wallace</td>
<td>Underway</td>
<td>Australia, France</td>
</tr>
<tr>
<td>184</td>
<td>East Asia Monsoon</td>
<td>Fremantle-Hong Kong</td>
<td>February-April 1999</td>
<td>Dr. Warren Prell Dr. Pinxian Wang</td>
<td>Dr. Peter Blum</td>
<td>Underway</td>
<td>Multiple</td>
</tr>
<tr>
<td>185</td>
<td>Izu-Mariana</td>
<td>Hong Kong-Tokyo</td>
<td>April-June 1999</td>
<td>Dr. John Ludden Dr. Terry Plank</td>
<td>Dr. Jay Miller</td>
<td>Underway</td>
<td>Japan</td>
</tr>
<tr>
<td>186</td>
<td>W. Pacific Seismic Net-Japan Trench</td>
<td>Tokyo-TBN</td>
<td>June-August 1999</td>
<td>Dr. Kiyoshi Suyehiro TBN</td>
<td>Dr. Gary Acton</td>
<td>To be determined</td>
<td>Japan</td>
</tr>
<tr>
<td></td>
<td>Dry dock</td>
<td>TBN</td>
<td>August-October 1999</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>187</td>
<td>Australia-Antarctic Discordance</td>
<td>TBN-Fremantle</td>
<td>October-December 1999</td>
<td>Dr. David Christie TBN</td>
<td>TBN</td>
<td>To be determined</td>
<td></td>
</tr>
</tbody>
</table>

**SCIENCE SERVICES**

**Staffing Information**

Staffing for Legs 181-183 is essentially complete, with just one or two places remaining to be filled on Leg 183. Co-chief scientists for Legs 184 and 185 have been appointed. Staffing for Leg 184 is in progress, and is just commencing for Leg 185. Leg 184 will be the first leg with significant involvement of China, so staffing presents some new opportunities.

With the continued help of all partners, we have been able to maintain a reasonable overall balance of scientists from participating countries on ODP (see Figure 1), although occasionally the balance varies on individual legs in response to applicants' needs and interests of a given participating country.
## DRILLING SERVICES

### Operations

#### Leg 177 Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Days (10 December 97 to 5 February 98)</td>
<td>58.6</td>
</tr>
<tr>
<td>Total Days in Port</td>
<td>5.1</td>
</tr>
<tr>
<td>Total Days Under Way</td>
<td>20.3</td>
</tr>
<tr>
<td>Total Days on Site</td>
<td>33.1</td>
</tr>
<tr>
<td>Drilling</td>
<td>0.28</td>
</tr>
<tr>
<td>Tripping Time</td>
<td>6.43</td>
</tr>
<tr>
<td>Logging/Downhole Science</td>
<td>1.04</td>
</tr>
<tr>
<td>Mechanical Repair Time (Contractor)</td>
<td>0.39</td>
</tr>
<tr>
<td>W.O.W.</td>
<td>1.19</td>
</tr>
<tr>
<td>Coring</td>
<td>22.78</td>
</tr>
<tr>
<td>ODP Equipment Downtime</td>
<td>0.59</td>
</tr>
<tr>
<td>Other</td>
<td>0.27</td>
</tr>
<tr>
<td>Stuck Pipe and Hole Trouble</td>
<td>0.14</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Distance Traveled (nautical miles)</td>
<td>4244</td>
</tr>
<tr>
<td>Average Speed Transit (knots)</td>
<td>8.7</td>
</tr>
<tr>
<td>Number of Sites</td>
<td>7</td>
</tr>
<tr>
<td>Number of Holes</td>
<td>38</td>
</tr>
<tr>
<td>Number of Cores Attempted</td>
<td>549</td>
</tr>
<tr>
<td>Total Interval Cored (m)</td>
<td>4988.9</td>
</tr>
<tr>
<td>Total Core Recovery (m)</td>
<td>4045.9</td>
</tr>
<tr>
<td>% Core Recovery</td>
<td>81.1</td>
</tr>
<tr>
<td>Total Interval Drilled (m)</td>
<td>370.5</td>
</tr>
<tr>
<td>Total Penetration</td>
<td>5359.4</td>
</tr>
<tr>
<td>Maximum Penetration (m)</td>
<td>597.7</td>
</tr>
<tr>
<td>Minimum Penetration (m)</td>
<td>4</td>
</tr>
<tr>
<td>Maximum Water Depth (m from drilling datum)</td>
<td>4634.7</td>
</tr>
<tr>
<td>Minimum Water Depth (m from drilling datum)</td>
<td>1984.1</td>
</tr>
</tbody>
</table>

#### Leg 178 Statistics

<table>
<thead>
<tr>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Days (5 February 1998 to 09 April 1998)</td>
<td>62.28</td>
</tr>
<tr>
<td>Total Days in Port</td>
<td>6.46</td>
</tr>
<tr>
<td>Total Days Underway</td>
<td>22.27</td>
</tr>
<tr>
<td>Total Days on Site</td>
<td>33.72</td>
</tr>
</tbody>
</table>
Drilling 0.45
Other 0.51
Tripping Time 5.82
Stuck pipe/Hole Trouble 0.92
Logging/Downhole Science 3.97
Mechanical Repair Time (Contractor) 0.03
Reentry Time 0.35
W.O.W. 2.59
Standby ice/heave: 2.6 (62 hrs)
Coring 18.74

Total Distance Traveled (nautical miles) 5454.0
Average Speed Transit (knots) 10.5
Number of Sites 9.0
Number of Holes 23.0
Number of Cores attempted 327.0
Total Interval Cored (m) 2923.7
Total Core Recovery (m) 1806.9
% Core Recovery 61.80
Total Interval Drilled (m) 374.7
Total Penetration 3298.4
Maximum Penetration (m) 607.7
Minimum Penetration (m) 2.9
Maximum Water Depth (m from drilling datum) 3852.6
Minimum Water Depth (m from drilling datum) 442.0

Reentry: 3
TV Survey: 1
Sites: 9
Holes: 23
Meters Cored: 2923.70
Meters Recvd: 1806.89
Meters Drill: 374.70
Total Penetration: 3298.40
Recovery: 61.8%
Time on Site: 33.1 days (794 hrs)
Support of Operations

Leg 177 - Southern Ocean

Introduction

A transect of 38 holes at 7 sites were cored across the Antarctic Circumpolar Current. A total of 4046 m of core (81.1%) was recovered despite large swells (to 30 ft), high heave (to 12 ft), and rolls to 15 degrees. The butyrate core liners failed on 46.8% of the cores; therefore, liner samples were returned for evaluation. An engineering review and assessment of the APC tool with environment and sediment interaction is underway.

Core Liner Failures

BACKGROUND: APC Core Liners have experienced many types of failures in the past, but the failures of Leg 177 were varied and persistent, with the consequences of either disturbing and losing core material or impeding core removal on the rig floor, resulting in poor recovery.

Inner core barrel seal leakage and connection leakage have caused previous core liner collapse failures. The seal leakage problem was greatly improved by replacing the ‘o-ring’ type seals with an integrated type of ‘poly-pak’ seal. The leakage that occurred at the inner connection was corrected by applying Teflon thread sealant to inner barrel thread connections.

Liner material is relatively brittle at temperatures typical of the ocean bottom, but seems to be more prone to failure when the pumped surface water is near freezing temperatures. When material properties were investigated for a liner that could meet a wide range of environmental conditions, tougher materials were found to exist but none that met all of the performance requirements (transparency, mechanical strength and toughness, low water absorption, ease of molding or extrusion, ease of splitting, etc.). Also, production tooling was considered to be too expensive for the higher performance materials.

Ship heave in high latitudes are often the product of mixed sea conditions that occasionally result in accelerated heave effects on the drill string. ODP has always experienced greater core liner incidents and recovery problems when operating in marginal heave conditions.

The lithologic properties of the material being cored also effects liner behavior. For example, silt layers have ripped holes in core liners and gasified clays have expanded on deck to split liners, also resulting in poor recovery due to liner damage.

APC Core Liner Failures - Leg 177

Statistics from Leg 177 indicate that, of 38 holes cored at 7 sites, core recovery was about 4046 meters from a cored interval of about 4989 meters for about 81% recovery. However, the liner failure rate was about 50% of which about 80% were oval shaped
'windows' in the uppermost two meters of the liner that are caused by differential fluid pressure across the liner. These failures were similar to those experienced with the APC before the integrated upper and lower seals were incorporated.

Shattered liners were brittle in nature and presumed to have resulted from lower than usual temperature. However, physical property measurements of failed liners were found to be within specification. It is suspected that liners were shattered from shock loading. Shock loading is an environmental condition that has led to core liner shattering in the past due to the sudden deceleration resulting from impact with drop stones.

Some wear was measured inside the Seal Bore Drill Collar but this condition did not retard core barrels from landing. Potential seal venting of pump fluid around core barrels should not have contributed to liner collapse.

Another possible explanation for the upper finer failures related to APC coring in higher latitudes is the action of the APC piston rapidly heaving up and down inside the liner after the tool has been fired. The APC utilizes a mechanism that was developed to lock the tool in the scoped-out position to facilitate the drill-over procedure that is sometimes necessary with APC coring. However, this device is time consuming to reset and has been found to be unnecessary for nominal heave conditions in warmer latitudes. It was not employed on Leg 177.

Summary

Leg 177 Core Techs were not employing the locking-latch mechanism that is normally used to assist in drill-over situations. Its use might have prevented the less catastrophic failures experienced in the upper portion of the liner. On the subsequent expedition, Leg 178, operations were conducted in similar lithographic conditions and sea states, although the sea states on Leg 178 were not as bad as those experienced on Leg 177. Leg 178 Core Techs utilized the post firing, lock-out latch with the same procurement batch of liner material. A few core finer failures were experienced but they were attributed to other causes, such as drop stone collisions.

While excessive ship heave and collision with drop stones are separate suspect causes, both are associated with high latitudes. Because the effects of low temperatures and lithographic conditions could have played a supporting role in these failures, these issues are still being investigated. The plan is to continue to monitor operational procedures while evaluating all potential causative conditions.

Guide Horn Failure

On 20 January while enroute to the last site and in rough seas, the aft lower-guide-horn pin broke and the bottom 16 ft of the port lower-guide-horn broke off and was trapped in the moonpool. Special operational limits of 4° pitch and roll were imposed for the partial guidehorn. Four holes were cored at the last site, but coring was halted on 23 January due to high seas (12-14 ft seas combined with 16-18 ft swells), which caused the special
operating limits of 4° roll to be exceeded along with a forecast of deteriorating weather. An I-beam frame was secured in the moonpool to hold the broken LGH, but it started moving in the moonpool during transit and was dropped. The ship proceeded to Puntas Arenas early for the Leg 178 port call. Plans were made to shorten the starboard LGH to 16 ft (to match the port LGH) and conduct Leg 178 (Antarctic Peninsula) with revised special operational limits to protect the drill string.

The upper section of the Lower Guide Horn was repaired and replaced at the Cape Town port call, except for the bottom 4 feet that extends below the external support structure to the bottom of the ship. Legs 178 through 186 will sail without this bottom section. The necessity for eventual replacement of the bottom section will be evaluated and deferred to Dry Dock in August 1999.

Leg 178 - Antarctic Peninsula

Introduction

Leg 178 recovered 1.8 km of sediment and sedimentary rock from 9 sites drilled off the West Antarctic Peninsula. The drilling systems used throughout the leg—the advanced piston corer (APC), extended core barrel (XCB), and the rotary core barrel (RCB)—are those most commonly used by ODP, and each performed within normal operating parameters. For example, recovery of soft sediment with the APC system typically exceeded 90% and core quality was generally excellent. For slightly more indurated sediment, the XCB system typically gave recovery of 40% to 90% (averaging 76.8% for the leg) and the core typically consisted of pieces of sediment and sedimentary rock undisturbed by drilling (biscuits) surrounded by slurry. For the glacial deposits on the continental shelf, the RGB system gave recovery that averaged only 11.6%. The diamict (granule, gravel, and boulder clasts supported by a poorly indurated matrix of sand and mud) encountered on the shelf proved to be difficult to spud into and is one of the most difficult lithologies to recover as shown on prior legs (e.g., Leg 152 in the East Greenland Margin). As the matrix became more indurated, and the diamicts graded into diamicrites, recovery and hole conditions improved. Even though Leg 178 was a fairly standard ODP leg from an operations viewpoint, there were a few exceptions related mainly to drilling in high latitudes. An ice support vessel was contracted to aid in monitoring icebergs and weather conditions and to provide emergency assistance. An ice observer was also added to the SEDCO crew, which is now a standard requirement on high-latitude legs. The occurrence of drop stones and diamicts made establishing holes difficult, slowed the rate of penetration (particularly when large felsic igneous rocks were encountered), reduced core recovery, and clogged the nozzles on the RCB bit. Icebergs, though only a minor distraction for the most part, did force the ship off site several times during coring operations. The swell on the continental shelf often exceeded 2 m resulting in 62 hours of standby time and additional delays related to tripping the pipe in and out of the hole. Although the pipe was stuck several times, no Bottom Hole Assemblages (BHAs) or pipe were lost while coring in the glacial deposits on the shelf.
Ice Support Vessel

The Polar Duke aided in tracking icebergs and monitoring weather conditions throughout the leg, and was capable of providing emergency assistance. The additional cost to the leg was $1,240,000.

Icebergs

Icebergs were targeted and tracked over a 24-mile range with the two bridge radars. While on site, a total of 74 icebergs were tracked, most of these occurring at Palmer Deep (Sites 1098 & 1099). Two holes (1095A and 1099A) were aborted owing to icebergs moving over the drill sites. In addition, at Hole 1097A an iceberg forced us to pull out of the free-fall funnel once, and coring operation were halted and the bit pulled to the top of the hole another time as an iceberg passed nearby.

Free-fall funnels were used at three sites on the shelf to allow reentry in case we were driven off site by icebergs, excessive heave, or bad weather.

We had drilled our first hole to 87.3 mbsf when operations had to be stopped because an iceberg (one of only two on the 24-mile radar screen) closed within 1.6 nmi, with a computed closest point of approach of 0.5 nmi. The drill pipe was pulled above the seafloor and the vessel offset 1000 ft north of the location while the iceberg passed over the drill site.

Transit Times

Antarctica is remote from all major ports, and so transit times consume a significant portion of the total leg time. The transit from the Site 1103 to Cape Town was 3660 nmi and took 13.5 days at an average speed of 11.3 knots. Paths estimated by the captain during the leg varied from 3600 to 3900 nmi, depending on current and ice conditions at the time and the course taken around islands. Assuming an average speed of 10.5 knots, 300 nmi requires 1.2 days to transit. A reduction in speed by 1 knot over 3700 nmi extends the transit by 1.4 days.

Sea Swell and Ship Heave

Even when weather conditions were excellent on site, a swell from the northwest produced ship heave that often exceeded 2 m at the shelf sites. The 2-m limit is an ODP safety guideline for drilling in 300-650 m water depth, but also proved to be a limit in terms of core quality and risk to equipment. Several times the heave was large enough to place the drill string under compression and displace the pipe several inches upward at the drill floor elevators while connecting pipe joints. The swell, while frustrating, was not unexpected. Operations during Leg 113 and GEOSAT wave height measurements suggested that swells of 3-4 m could be expected roughly 30% of the time.
Lower Guide Horn

The lower section of the guidehorn was damaged during Leg 177, which resulted in a new set of operating constraints for Leg 178. Fortunately, weather conditions were very good during Leg 178 and we never exceeded the pitch and roll limitations while coring. Thus, the loss of the lower guidehorn did not impact our leg.

Coring Operations

Nozzles on the XCB bit became clogged with clay and small dropstones during coring in Hole 1096B, which reduced recovery and eventually forced us to clean the bit and proceed to a new hole. Similarly, the RCB bit became clogged in Hole 1097A. In this case, a "swab cup" was used to drain water from the top 300 m of the pipe, which reduced the pressure at the bit and forced fluid back up the bit nozzles, clearing the blockage.

Dropstones and rocks within the diamicts reduced core recovery by blocking the entry of softer sediment at the core catchers and at the throat of the bit.

Conclusions

Drilling operations off West Antarctica were not exceptional. Risks and difficulties related to drilling at high latitudes, in particular swells, bad weather, ice, and drilling in glacial deposits, do exist and should be considered in planning. Science objectives can be attained as long as each cruise proposal accounts for these variables and plans appropriately.

Leg 179 - Hammer Drill System Test and NERO ION Site

Two of the three containers shipped to Cape Town for this heavy equipment leg were diverted by the shipping line, and when this error was discovered these containers could not meet the ship in Cape Town. The errant cargo was located in La Spezia, Italy, off-loaded, air freighted to Reunion Island and shipped by boat to the JOIDES Resolution on station on the Southwest Indian Ridge. Due to heavy weather, only a partial transfer was made and the remainder returned to Reunion for forwarding to the Leg 180 Port Call in Darwin. An interim logistics report is provided here and a more complete report will follow at the meeting.

Logistics Assessment of Leg 179 Surface Shipment

Planning - The Leg 179 surface shipment planning was conducted using Material Services standard format. Knowledge of the volume and type of materials to be shipped were supplied by the Operations and Science Service personnel. This information was collated in terms of weight and volume, and passed to our freight forwarding company Panapina, who holds our bonds. Panapina recommended we place the entire shipment with Magna shipping out of Houston Texas. Magna could supply all three types of services needed for this shipment:
• a breakbulk shipment for the casing;
• containers for the lab supplies; and
• flats for the core liner boxes.

We chose Magna because our policy is to use as few carriers as possible to avoid excessive paper work and reduce the confusion at the arrival end as to where individual shipments are located.

Bookings – ODP booked one standard flat rack and two standard forty-foot containers from Houston to Cape Town. The breakbulk was sent by separate vessel. ODP delivered the freight to the Houston municipal container facility per Magna’s instruction and received from Magna and Panapina verbal and written confirmation the freight had been shipped. The two containers and one flat were to travel under one bill of lading to Cape Town. A Matson Lines subsidiary in Johannesburg, Broadspeed, would cut the full bill of lading when the containers arrived.

Tracking - We tracked the progress of the ship and noted its arrival in Cape Town as scheduled. The breakbulk shipment was delayed by high winds but arrived before the JOIDES Resolution docked. We received confirmation from our agent in Cape Town that the Morleos had docked and unloaded equipment against our bill of lading. Our field agent arrived in Cape Town three days before the vessel docked and asked to see the containers. Broadspeed could only locate the flat in Africa. Further investigation by Magna shipping in the US indicated two containers were never loaded aboard the Morleos. Discussions with Italian Lines personnel at the Houston container facility revealed the two missing containers were never loaded aboard the Morleos for voyage 17 but held at the Houston container facility for one month until the vessel returned from Cape Town. The two containers were then loaded aboard the same vessel for voyage 18 that was destined not for Cape Town but Southern Europe.

Recovery - After learning the location of the two missing freight containers, several requests were made to the shipowner to stop the vessel and remove the containers in the Azores. The ship owner refused to bring the ship into port for an unscheduled port call because of the negative impact that this decision would have on the ship’s schedule. One container was stored deep within the ship, and the Captain would not allow it to be unloaded until reaching La Spezia in Northern Italy, the final port call for voyage 18.

After recovering the freight in La Spezia, the containers were taken to Genoa where a jet freighter was chartered and the critical equipment flown to Reunion Island. Equipment not critical for Leg 179 was sorted into two containers. One container was forwarded to Australia with equipment that will be required on future legs. The second was returned to the US with equipment no longer germane to the work to be conducted on Leg 179.

Delivery – A small vessel named La Curieuse was chartered in Reunion from the Institut Francais Pour La Recherche Et La Technologie Polaires to carry the equipment out 800 miles to Site 735B where the JOIDES Resolution was conducting operations. The weather at the vessel was calm when La Curieuse left port but a deep low developed at the drill site producing twelve-foot high seas. Due to vessel motion, we were only able to
deliver critical freight (hammer drill bits) and could not exchange heavy equipment or personnel. The vessel returned to port because deteriorating weather was forecast for the next several days.

Costs – The estimated costs for the operation are summarized in the accompanying table.

<table>
<thead>
<tr>
<th>Item</th>
<th>Estimated cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Charter aircraft</td>
<td>$98,200</td>
</tr>
<tr>
<td>Delivery vessel</td>
<td>$20,000</td>
</tr>
<tr>
<td>Miscellaneous A/F, shipping, and travel</td>
<td>$50,000</td>
</tr>
<tr>
<td>Total</td>
<td>$168,200</td>
</tr>
</tbody>
</table>

Cost recovery – When a mistake of this magnitude occurs it is reasonable to attempt cost recovery. A separate cost center has been set up to track all direct costs associated with this operation. While mistakes happen, it is obvious that holding the containers for one month in Houston without informing ODP of a failure to load, splitting a bill of lading, and putting the containers on a voyage not destined for Cape Town, is less than acceptable. We have solicited letters of information from both Panapina and Magna shipping as to the events surrounding this failure to perform. All of the above will be turned over to the ODP administrator for analysis and further action.

Recommendations – We track all foreign shipments and require the shipper to furnish load position of the containers aboard the vessel or aircraft when it changes vessels or aircraft. When we have a direct shipment such as this operation, we only monitor the ships schedule to insure it has not slipped. In the future, we will monitor load positions on all shipments. However, if an agent tell us the freight is loaded aboard a vessel or aircraft and it is untrue, there is little we can do.

**Technology Development**

**Hard Rock Reentry System (HRRS)**

The HRRS test was in the final stages of implementation when this report was written; a more complete report will be given at EXCOM, but a brief synopsis is provided below.

Sea trials of a percussion hammer, various types of bits, a casing suspension system, and a casing shoe were to be conducted on Leg 179 on the Southwest Indian Ridge near Site 735B. Due to the missing freight, the hammer tests were phased to allow the freight with extra hammer bits to arrive at the ship. An offset hole was cored at 735B while waiting for the equipment to arrive at the ship. The hammer performed well, but the heave effects of the ship on the hammer will require the valve body to be redesigned to eliminate a failure mode in the hammer due to probable pressure transients created by the heave. The bits used during this initial test were a retractable bit design that allows a large diameter hole to be drilled when casing is used. The retractable bits are a relatively new design that had been tested on a fixed platform in igneous rock, but performed
poorly in the heavy seas at 735B and their failure mode needs to be assessed. After successfully transferring three additional bits, the hammer and a proven crown drilling bit achieved 8 m of penetration in 1.6 hrs even though the hammer was being operated at 1600 vs 2200 psi, due to excessive heave. While correcting a standpipe leak, with the hammer and bit pulled off bottom, a crossover sub below the drill collars failed, and the hammer and bit were lost in the hole on the last test. The premature failure of the retractable bits, the failure of a valve within the hammer, and the failure of a crossover sub can all be attributed to the severe heave conditions experienced by the JOIDES Resolution during the hammer tests, with the hammer rising off bottom and then banging into the bottom on a regular basis. The high seas also resulted in the cancellation of the equipment transfers from the resupply boat (25 m trawler/research vessel), which was taking large rolls. Due to time constraints, heave, missing freight and bit failures; the casing tests with the hammer were not conducted. The results will be interpreted to evaluate the system for service readiness in preparation for additional operational tests in FY99.

Active Heave Compensation (AHC)

As reported to EXCOM in January 1998, RETSCO was identified as the preferred bidder to upgrade the passive heave compensation system on board the JOIDES Resolution to an active heave system based on bid documents submitted in the Fall of 1997. In January of this year, questions about the technical robustness of their plan to activate the JOIDES Resolution’s passive heave compensation system, as well as a question about the propriety of the software that drives the RETSCO active heave system, resulted in a request to RETSCO to respond to technical and software patent questions. RETSCO failed to respond to this request in a timely fashion and the AHC will be rebid to two qualified contractors, with a ship inspection by the bidders scheduled for the Leg 180 Darwin port call. Assuming that the bid documents are technically sound and are financially within our reach, a preferred bidder will be identified and the target for system installation will be at the FY99 August drydock.

Joint Industry Products

CONOCO/HYDRIL

Riserless Drilling Project has moved into Phase II, Engineering Development. ODP has been asked to share their deep water expertise in exchange for a research membership in the JIP.

Drilling Engineering Association

Drilling Engineering Association, Project 114, Hard Rock Reentry System development consists of ODP offering test reports from the development of their Hard Rock Reentry System as they are prepared for $25,000 per participant. Thus far, several major Petroleum Operators have expressed interest, such as UNOCAL, ARCO, EXXON, SHELL and AMOCO.
INFORMATION SERVICES

Status of JANUS operations and operational challenges and solutions

The JANUS system continues to work well and the operational aspects are becoming smoother with each leg as the shipboard MCSs gain experience. Early in FY98 the shore based test bed was established. This capability permits each new JANUS build, as well as beginning of leg/end of leg installations, to be rehearsed on shore before port call. As a result, the processing has been going well at the beginning of each leg and fewer problems are being encountered with the various scripts which are being used.

The last remaining major JANUS application is the Visual Core Description (VCD) module and it is scheduled for completion in FY98. This module consists of a modified AppleCORE software package that will assist petrologists and structural geologists to describe freshly opened cores. In addition, the completion of the Image Capture System by the end of FY98 will provide digital core images that can be imported for display in AppleCORE.

Additional operational improvements include upgrading satellite communication speeds between the ship and shore with the installation of the Inmarsat "B" equipment in December, and two new servers to improve on board system reliability, performance and memory capacity. The first server installation was at the Leg 179 port call and the next installation will be at the Leg 180 port call.

With the end of the JANUS project in sight, Information Services of ODP/TAMU has taken over the responsibility for all of the JANUS source and object code. This transition of responsibility to ODP from Tracor has gone well. Procedures have been established for the delivery of each JANUS build to the ship at the beginning of each leg. Prior to being sent to the ship, each build is tested by personnel on shore.

The JANUS application itself continues to have corrections made to small problems as they are encountered. Overall the system continues to function well and future enhancements will be made to improve the user interface. One of the major activities being undertaken at this time is to migrate all of the JANUS reports to the web environment as part of the total JANUSWeb application. While many of the science reports have already been migrated, the efforts will now focus on the Operations and Curation reports. Additional queries and enhancements continue to be made to the JANUSWeb application based on user feedback from the ship as well as improvements to the user interface.

Additional JANUS applications have been added by the IS/Applications Development group. The most recent applications to be completed are the Adara tool data load and edit, and the sedimentary smear slides application. While there is more testing to be done on these applications prior to deployment for production usage, it is anticipated that these will be put into production use on Leg 181. In the near future the capability
for thin sections will be added to this application along with the ability to export and import comma delimited ASCII files.

**Data Migration Plan**

With the successful completion of the JANUS project in FY98 we now have an up-to-date data model and application to capture most of the ODP prime data that is collected on the ship into the JANUS database. In the third quarter of FY98 we plan to utilize in-house resources (1 FTE and a graduate assistant) to begin the migration of the legacy data of the program. Our current data migration priorities are: GRAPE, P-wave, magnetic susceptibility, natural gamma, moisture and density, color reflectance and paleomagnetic data. In addition, the paleontology range charts from the Scientific Results volumes starting with Leg 149 will be entered directly into the JANUS database. The paleodata entry for previous legs (Legs 101-148) are available in Excel spreadsheets.

**PUBLICATION SERVICES**

**Volume Production**

From January to May 1998 the following ODP Proceedings volumes were produced and distributed:

*Initial Reports*
- WWW (PDF version): 167, 168, 169, 169S, 170

*Scientific Results*
- Book and CD-ROM (PDF version): 152, 158
- WWW (PDF version): 155, 158

From June to December 1998 the following ODP Proceedings volumes are expected to be produced and distributed:

*Initial Reports*
- Book and CD-ROM (PDF version): 172, 173
- WWW (PDF version): 171A, 171B, 172, 173

*Scientific Results*
- Book and CD-ROM (PDF version): 157, 159, 159T, 160
- WWW (PDF version): 156, 150X, 157, 159T, 159, 160
Transition to Electronic Publications

Efforts are underway to notify ODP’s long-term users (librarians and researchers) about the move from printed to electronic publication formats. All volumes printed and distributed this year contain a letter announcing the change and include the ODP WWW URL and the ISSN numbers for the CD-ROM and WWW formats of the volume. Information about the change and where to find the volumes has also been distributed to list servers and other information sources including the Joint Geophysical Association, University Science and Technology Librarians, Serial Librarians, Reference Librarians, International Council for Scientific and Technical Information, New Journal and Newsletter Announcement List for new serials on the Internet. The U.S. Depository Library Program has announced that they will add a link from their resource site called “Browse Electronic Titles” to our on-line publications. We have also been pleased at the number of libraries that have contacted us to make sure that they will continue to receive the *Proceedings* volumes after the format changes. The Project Manager for the Electronic Publication SOE has been invited to give a talk at the GSA fall meeting at the Database Forum of the Geoscience Information Society. This meeting will be an opportunity to present and discuss our new format and plans for publication.

PDF versions of five *Initial Reports* and two *Scientific Results* volumes were published on the WWW between January and May 1998 (<>). A list of volumes now available on the WWW (replicas of the printed volume in PDF format) can be seen above. In addition, color core images from the volumes were linked to the JANUS Web site via the JANUS Power Query page (<http://www-odp.tamu.edu/database/>). Evaluation of software to analyze web-site usage is almost complete. Preliminary findings indicate that the ODP community is already accessing the volumes posted on the WWW in PDF format. The following table shows the number of hits to specific ODP site URLs relating to Publication Services (note this table only gives figures for sites that ranked in the top 100 of all sites accessed on the ODP site in a given month). Hits made from inside ODP to the web site have been deleted from the count.

<table>
<thead>
<tr>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ODP main page</td>
<td>3,130</td>
<td>4,280</td>
<td>4,010</td>
<td>3,981</td>
<td>1,412</td>
</tr>
<tr>
<td>Publications main page</td>
<td>533</td>
<td>717</td>
<td>705</td>
<td>957</td>
<td>291</td>
</tr>
<tr>
<td>154 SR first page</td>
<td>180</td>
<td>231</td>
<td>217</td>
<td>233</td>
<td>58</td>
</tr>
<tr>
<td>166 IR first page</td>
<td>111</td>
<td>144</td>
<td>**</td>
<td>**</td>
<td>111</td>
</tr>
<tr>
<td>177 IR first page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>41</td>
</tr>
</tbody>
</table>

* Count through 14 May 1998. **No data because this site did not rank in the top 100 sites with the highest hits on the ODP web site for the month of March.

The redesign of the *Initial Reports* booklet and CD-ROM product is underway, while work continues on the transition volumes (volumes which are being published in print, CD-ROM, and on the WWW). The Publication Services staff is continuing work on the development of the ODP web site and *Proceedings* volume interface. The new interface will be a visual directory of all leg-related publication products.
During the first five months of 1998, the Publication Services Department worked on the prototype design for the new *Initial Reports* (IR) volume format. A design has been developed for the listing of volume contents and formats created for chapters and prime data material. As directed by JOI, all material will be prepared in the PDF format. The page layout has been designed for easy on-screen reading, but also fits onto the printed page. This was done because research shows that when on-line documents are longer than 2 pages adult readers prefer to print documents and read them in the hard-copy format. The first two volumes that will be produced in this format are 176 and 177. The postcruise meetings for these two legs are scheduled for June 15-19 and May 25-29, respectively. During these two meetings, the scientific participants will meet with Publication Services staff to provide feedback on the basic design.

A beta group, consisting of members of the scientific community, is being established to provide feedback on design components. The WWW site for the beta group is located at <> . If you are interested in being on the beta group list server, contact Jennifer Rumford, Project Manager. You can view the prototype IR volume design at:

< http://www-odp.tamu.edu/publications/isis/BOOK.PDF >

After Legs 176, 177, and 178 were completed, two modifications were made to the format of the booklet that will accompany the IR CD-ROM. Neither affects the booklet content. First, because of the similarities between the science section of the Preliminary Report and the Leg Summary chapter of the IR volume, it was decided that it would be more efficient to create a single document that answered both needs. After the cruise the first draft of this report will be published as the science section of the Preliminary Report about one month postcruise. The report will then be reviewed at the first postcruise meeting (3-5 months postcruise) and published as the Leg Summary chapter in the *Initial Reports* (IR) volume. In order to streamline the production process of this information, Publication Services now coordinates the production of the Preliminary Report with assistance from the Leg Project Manager.

Originally, the IR booklet was to contain two chapters that summarized the leg science—a Leg Summary chapter that outlined the cruise objectives and a Site Abstract chapter that described the principal results from the leg. After testing out this model during Legs 176–178, it was determined that, from a scientific viewpoint, it was better to incorporate the information in these two chapters into a single chapter.

In summary, the IR booklet will contain a CD-ROM user guide and one science chapter called the Leg Summary chapter. The Leg Summary chapter will be written in the format of a scientific paper. The IR CD-ROM will contain all the information printed in the booklet plus the other “standard” sections of the *Initial Reports* volume (explanatory notes, site chapters, and prime data).

Print on demand is being researched. It should be noted, however, that if print on demand is offered to the scientific community the publication product will not be the same as the current archive-quality, case-bound books. The product will be a 600-dpi laser print product. Halftones (photographs) will not hold the crispness and detail that
are seen in the professionally printed books, and the material will be softbound (glued spines) or presented in binders.

**Distribution of Proceedings Volumes**

The Publication Services Department continued its drive to increase volume distribution. Eight institutions received full sets of ODP Proceedings volumes for the cost of shipping and were added to the gratis distribution list.

**Combined Publication and Curation Policy**

In February, under recommendation from JOI, the Manager of Publication Services and the ODP Curator reworked the Publication and Curation policies into one document. The rationale behind the work was to provide the user community with a policy that outlined all the rules relating to sample receipt. A draft of the policy was reviewed at the February SciMP meeting and endorsed. The Manager of Publication Services and the ODP Curator are revising the policy based on comments from SciMP, and will present the revision to SciMP at the June 1998 meeting.

**Future of the Scientific Results Volume Publication**

In an effort to reduce the Publication Services budget by 30%-50%, two major changes were made to the Publication Policy that would lead to a reduction in the department's annual operational budget of approximately $400,000 between FY97 and FY02.

The two policy changes were:

1. **Beginning with Leg 160**, allow scientists the option of publishing postcruise results in either the Scientific Results volume, or in any peer-reviewed scientific journal that publishes in English.

2. **Beginning with the Leg 176 Initial Reports volume** and the Leg 169 Scientific Results volume only publish Proceedings of the Ocean Drilling Program volumes in electronic formats (CD-ROM and World Wide Web).

The first policy change has been well received by the ODP scientific community because they are thrilled to have the freedom to publish in the outside literature. The downside of the change is that there will no longer be a leg-related collection of scientific papers available to future researchers (or a printed legacy to the Program). The second policy change has received many negative reviews. Many scientists with an interest in publishing in the Scientific Results volume, whose careers are judged on the basis of their publications, have decided not to take the risk of publishing in an all-electronic publication. Though this medium is gaining rapid popularity in many scientific arenas, most ODP scientists are unwilling to put their careers on the line to be the first ones to publish electronically. Thus, the unpopularity of the all-electronic format and the new opportunity to publish postcruise research in geoscience journals have led to a significant decline in contributions to the Scientific Results volume.
At the end of every leg, a preliminary publication list is generated with proposed titles and publication venues. At the postcruise meeting (held 12–24 months after each leg), the leg participants review their postcruise research results and refine their plans for publishing their results. By 33.5 months postcruise, ODP has a final listing of all publications that have been submitted to the *Scientific Results* volume and the outside literature.

Currently, we have preliminary publication lists for Legs 167 and 171B–177, refined publication lists for Legs 164–166 and 168–171A, and final publication lists for Legs 101–163. Table 1 summarizes the data.

**Table 1. Number of proposed titles and published papers in the *Scientific Results* volume.**

<table>
<thead>
<tr>
<th>Legs</th>
<th><strong>Scientific Results</strong> format (policy)</th>
<th>Average number titles proposed for SR</th>
<th>Average number papers published in SR</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-159</td>
<td>Book (contains all postcruise science results)</td>
<td>55</td>
<td>41</td>
</tr>
<tr>
<td>160-169S</td>
<td>Book (postcruise science results may be submitted to the printed SR or a geoscience journal)</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>169-177</td>
<td>CD-ROM/WWW (postcruise science results may be submitted to the electronic SR or a geoscience journal)</td>
<td>13</td>
<td>NA*</td>
</tr>
</tbody>
</table>


These data show that because of these two policy changes, the average number of contributions to the *Scientific Results* volumes will drop by as much as 75%; 50% with the advent of publication in outside literature, and a further 25% when book production ends (Table 1).

ODP is responsible for tracking citation information for the authors who choose to publish in the outside literature (Table 2). We expect to continue to see contributions to the outside literature increase after FY99. Citations for these publications will be listed on the leg-related citation list on the Publication Services WWW site.

**Table 2. Number of proposed titles slated for publication in outside journals.**

<table>
<thead>
<tr>
<th></th>
<th>FY95</th>
<th>FY96</th>
<th>FY97</th>
<th>FY98</th>
<th>FY99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of manuscripts</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>26</td>
<td>182</td>
</tr>
</tbody>
</table>


**Historically, two Productions Coordinator have each handled work associated with an average of 115 manuscripts per year. In FY99 we expect to receive approximately 103 manuscripts (Table 3), and in FY00 even less.**

**Table 3. Number of *Scientific Results* manuscripts processed per year.**

<table>
<thead>
<tr>
<th></th>
<th>FY95</th>
<th>FY96</th>
<th>FY97</th>
<th>FY98</th>
<th>FY99</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of manuscripts</td>
<td>235</td>
<td>226</td>
<td>173</td>
<td>93*</td>
<td>103*</td>
</tr>
</tbody>
</table>

*Proposed manuscripts.*
Based on this data, ODP/TAMU will reduce staffing because of the decrease in contributions to the *Scientific Results* volume. In FY99 payroll savings will equal $26,827.

The expected decline in contributions to the *Scientific Results* volume appears to be so severe that ODP/TAMU recently met to discuss the value of continuing to produce this publication. After analyzing the data, ODP/TAMU created a recommendation to eliminate the *Scientific Results* volume and create a WWW-based journal for data reports, synthesis papers, and technical notes. Papers would be accepted for peer review at any time after the cruise ended and would be published on the WWW after final acceptance (instead of at 4-years postcruise). This system would expedite the distribution of leg-related postcruise science information into the community and increase Program visibility. A reprint collection would be published on CD-ROM annually and distributed to libraries. There is concern in the community that a significant number of authors who intend to submit their postcruise science results to the outside literature will not do so. By establishing an open-ended submission policy, ODP/TAMU hopes to capture papers that would otherwise potentially be lost forever. The ODP/TAMU staff is preparing a proposal to outline their recommended plan. It will be presented at EXCOM and SciMP in June 1998.

**ODP/TAMU WWW Site Update**

In addition to the regular development and maintenance tasks, the following projects have been addressed since January 1998. The Micropaleontology Reference Center pages (under Curation) have been revised. The lab pages (under Science Services) have been updated. Interfacing between the lab pages and other ship information (under Public Information) has been improved. The FY99 science program summary has been published. Photos and commentary from Legs 176 and 178 were published during the cruises. Core images were linked from the ODP volumes to the JANUS Web page and can now be accessed through the JANUS Power Query. WWW pages are been created for SCIMP panel subgroups.
Total: 1977 Participants
Plot includes Staff Scientists and LDEO Logging Scientists
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 Program Plan and the revised FY 99-03 response to the RFP for ODP Logging Services were prepared and submitted to JOI. The FY 98 standard list of tools will be maintained in FY 99, with the Dipole Sonic Imager (DSI) replacing the lost sonic tool (Leg 175).

A report on potential Year 2000 problems and the steps being taken to address these problems was sent to Patricia Williams (JOI).

ODP Logging Services was invited to participate in an AAPG book entitled Geological Atlas of Borehole Images.

ODP Logging Services Proponents Helper was installed on the ODP/LDEO Web site.

The logging group in France moved from their Marseilles location to Aix-en-Provence. Along with the move comes a name change to Laboratoire de Mesures en Forage (LMF).

Cruise Highlights:
Leg 176 - SW Indian Ridge: The upper 595 m of Hole 735 were logged during Leg 176 (above lost drill string), extending the Leg 118 log dataset 95 m deeper and adding FMS images. Digital scanning of the whole round cores using the DMT (German) scanning system was successfully completed during the leg. The FMS and scan images enable orientation of structural features observed in the core. The scan images have been
translated to JPEG format and distributed to the Leg 176 participants on two CD-ROMs.

Leg 177 - Benguela current: Standard logging operations were completed at Hole 1093D. The natural gamma log shows cyclicity and initial comparisons with MST data show promise to resolve orbital to suborbital variability in these diatom-rich sediments. Magnetic susceptibility data is also promising as a core/log integration tool throughout the hole.

Leg 178 - Antarctic Peninsula: Standard and magnetic field logs were acquired at three sites on the Pacific Margin of Antarctica. A preliminary polarity stratigraphy was derived onboard the JOIDES Resolution from the total magnetic field log which filled gaps in, and extended paleomagnetic results from core. This was especially useful for age determination in the lower intervals where biscuited cores were recovered.

**Engineering and Software Developments:**
The NSF-funded Seismic-While Drilling (SWD) pilot system which measures drill bit vibrations was completed on schedule and deployed on Leg 179. The SWD system and other downhole tools will be used to measure accelerations of the drill string. Plans for evaluation of heave compensation effectiveness and for future technology innovations have been coordinated with TAMU engineering and are scheduled for initial testing in late FY98.

The Inmarsat-B system that has been on loan to ODP/LDEO from the SEANET consortium since October 1996 was removed from the JOIDES Resolution. The unit was replaced with equipment purchased jointly and used by both TAMU and LDEO to transmit email and log data files.

A wireline cross-over device that facilitates fast and secure connection of a third-party logging tools to the Schlumberger cable head was manufactured for use on Leg 179.

CLIP development efforts during this period focused the core-log depth integration software module -- Sagan -- which can manage up to 10 holes of core data, 5 data types, and a (practically) infinite number of cores and data points.

*As of the end of May, all conventional ODP log data will have been migrated to the log data base.*

ODP Logging Services drydock plans include general maintenance and enhancements of shipboard facilities and equipment, an upgrade of existing space in the Downhole Measurements Lab, and the replacement of the Schlumberger Maxis unit with a state-of-the-art, modular, PC-based data acquisition unit.
I. MANAGEMENT

Meetings and Events

The FY 98 standard list of tools will be maintained in FY 99, with the Dipole Sonic Imager (DSI) replacing the lost sonic tool (Leg 175).

An ODP Logging contractors' meeting was held in San Francisco, CA in conjunction with the fall AGU meeting. Among the topics discussed were upcoming leg staffing, the role of the logging liaison at SSEP meetings, and plans for FY 99-03.

The annual BRG retreat in Harriman, NY reviewed ODP operations and staffing for FY 99 and beyond, recent and future project planning, port call scheduling, and technical developments.

ODP Logging Services personnel participated in the staffing of the ODP booth at the fall AGU meeting. Visitors to the booth received copies of the logging poster and the Guide to Logging brochure. They were also given a tour of the ODP Logging Services website, including the latest addition, the ODP Logging Services Proponents Helper.

The Columbia University policy office was contacted regarding scientific and technical collaboration with scientists from the People's Rep. of China under University contracts and did not foresee difficulties with future ODP operations.

The FY 99 Program Plan and the revised FY 99-03 response to the RFP for ODP Logging Services were prepared and submitted to JOI.

A report on potential Year 2000 problems and the steps being taken to address these problems was sent to JOI.

Personnel

The logging group in France moved from their Marseilles location to Aix-en-Provence. Along with the move comes a name change to Laboratoire de Mesures en Forage (LMF). Véronique Louvel will be the new Manager and Chief Scientist of this group, replacing Philippe Pezard. Andre Revil and Christine Lauer will replace F.D. De LaRouziere and Herve Cambray as logging scientists.

The open Log Analyst position at BRG was filled by Noothan Kurian.

The open Database Assistant position at BRG was filled by Jim Murray.

The open Logging Scientist positions at Leicester University were filled by Guy Spence and Patrick Fothergill who will replace Carlos Goncalves and Adrian Newton.
II. STANDARD LOGGING OPERATIONS

Leg 176 - Return to Hole 735B

The JOIDES Resolution arrived in Cape Town on December 10, 1997 after successfully logging the upper 595 m of Hole 735B in the open hole section above the lost drill string. These data extend the Leg 118 log dataset 95 m deeper and add FMS images and better porosity, sonic, and gamma ray data quality. The Hole 735B FMS data quality was excellent after preliminary post-cruise data processing, although initial assessment of the FMS data was difficult due to the extreme resistivity contrasts between the Fe-Ti oxide gabbros (10 Ωm) and the olivine gabbros (10,000 Ωm) which exceeded the Maxis display range. Quality control in similar high-resistivity environments may be improved in the future by filled the hole with fresh water fluids.

<table>
<thead>
<tr>
<th>Hole 735B</th>
<th>First Run</th>
<th>Second Run</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triple Combo w/DLL [mbsf]</td>
<td>120-501</td>
<td>79-595</td>
</tr>
<tr>
<td>FMS/DSI [mbsf]</td>
<td>293-502</td>
<td>49-595</td>
</tr>
<tr>
<td>DLL/GPIT [mbsf]</td>
<td>-</td>
<td>49-595</td>
</tr>
<tr>
<td>VSP [mbsf]</td>
<td>-</td>
<td>94-587</td>
</tr>
</tbody>
</table>

Digital scanning of the whole round cores using the DMT (German) scanning system was successfully completed during the leg. The FMS and scan images enable orientation of structural features observed in the core. The scan images have been translated to JPEG format and distributed to the Leg 176 participants on two CD-ROMs.

Leg 177 - Southern Ocean Paleoceanography

Site 1093 is located north of Shona Ridge near the present-day position of the Polar Front, north of the average winter sea ice edge. The region is marked by thick, moderately laminated pelagic sediments that were deposited at very high sedimentation rates within the circum-Antarctic biogenic silica belt. The purpose of Site 1094 was to obtain a high-resolution record of biosiliceous sediments south of the present-day position of the Polar Front. Together with Sites 1089, 1091, and 1093, Site 1094 represents the southernmost site across the ACC needed to reconstruct past changes in frontal boundaries and sea ice distribution during glacial-interglacial cycles of the Pleistocene. Logging operations were completed at Site 1093, Hole D.
Hole 1093D

<table>
<thead>
<tr>
<th>Tool String</th>
<th>Logged Interval (mbsf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Triple Combo</td>
<td>67-583</td>
</tr>
<tr>
<td>GHMT</td>
<td>67-568</td>
</tr>
</tbody>
</table>

Despite the large hole, the natural gamma log shows clear cyclicity and initial comparisons with MST data show promise for core-log integrations. The sediments at Site 1093 are composed predominantly of diatoms with sedimentation rates of 25-50 cm/kyr range. Thus, gamma ray counts are fairly low due to clay dilution by biosilicous material and it was difficult to estimate the mudline through the pipe. However, the high sedimentation rates will allow the logs to resolve orbital to suborbital variability. Magnetic susceptibility data looks promising as a possible core/log integration tool despite its low signal. Porosity was very high, and resistivity was very low throughout the hole.

**Leg 178 - Antarctic Peninsula**

Standard and magnetic field logs were acquired at three sites on the Pacific Margin of Antarctica. Three sites were logged out of a planned seven. The number and depth of planned sites/holes was compromised by difficulties in coring stable holes in diamicrite shelf sediment.

<table>
<thead>
<tr>
<th>Tool String</th>
<th>Logged Interval (mbsf)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hole 1095B</td>
<td></td>
</tr>
<tr>
<td>Triple Combo</td>
<td>570-0</td>
</tr>
<tr>
<td>GHMT</td>
<td>570-0</td>
</tr>
<tr>
<td>WST</td>
<td>12 stations</td>
</tr>
<tr>
<td>Hole 1096C</td>
<td></td>
</tr>
<tr>
<td>IPLT</td>
<td>556-0</td>
</tr>
<tr>
<td>GHMT</td>
<td>556-0</td>
</tr>
<tr>
<td>Hole 1103A</td>
<td></td>
</tr>
<tr>
<td>Triple Combo</td>
<td>242-92</td>
</tr>
<tr>
<td>GHMT</td>
<td>242-92</td>
</tr>
<tr>
<td>FMS-Sonic</td>
<td>242-92</td>
</tr>
</tbody>
</table>

Sites 1095 and 1096 lie on a sediment drift on the continental rise, and are aimed at sampling sediments that originated at the glaciated Antarctic Peninsula margin and contain a record of ice sheet advance and retreat. Site 1095 lies on the lower, distal flank of the drift, and Site 1096 on its crest. Site 1095 was chosen to sample the older
part of the drift sedimentary succession, more accessible beneath a much thinner younger sequence than the more proximal, hemipelagic sediment drift at Site 1096.

The 570 m deep Hole 1095B was logged with the Triple Combo and GHMT toolstrings, and we carried out a WST check-shot survey with 12 stations. The natural gamma and magnetic susceptibility logs both yielded information about the sediment's silt content. A preliminary polarity stratigraphy was derived onboard the JOIDES Resolution from the total magnetic field log which filled in gaps, and extended paleomagnetic results from core. The check-shots were processed on the CSU by Schlumberger and reflectors were identified within and below the cored interval.

After Hole 1096C had been cored to 607 mbsf, it was logged under unstable hole conditions. The logs were used to characterize the intervals of unrecovered core, and to complement the core data, especially in the lower part, where the logs were cyclic and characterful, but the lithology of the biscuity XCB core itself showed only subtle variation. From comparison with smear-slide data, K feldspars and micas contribute significantly to the natural gamma log, which therefore cannot be interpreted in terms of clays alone.

Hole 1103A was logged with the Triple Combination, GHMT, and FMS-Sonic tool strings over a 150 m interval where there was no core recovery (apart from a few pebbles). Porosity varied between 30 and 50% (lower than at the rise sites), showing a change to higher porosity only at the base of the log below 225 mbsf, below which the sediment changes to the lithified diamictite seen in the core. Resistivity, sonic velocity and susceptibility show broad peaks and troughs, and individual clasts can be seen in FMS images. Distinct zones of spikes in the GHMT magnetic field log probably indicate clast-rich intervals.

**Portcall Operations**

During the Leg 178 portcall in Punta Arenas, the Schlumberger airfreight shipment and TAMU's shipment of acetone were delayed and did not arrive before the ship's departure. Transport and transfer was arranged using the RV Gould which was also working in the area to the Polar Duke ice support ship to the JOIDES Resolution. This transfer was done without additional cost to the program with excellent cooperation between the various NSF-sponsored parties.

**III. SPECIALTY TOOLS AND ENGINEERING DEVELOPMENTS**

**Temperature and Acceleration Pressure Tool (TAP)**

The TAP tool replaces Lamont temperature tool and in addition to measuring temperature and pressure it measures acceleration in the z-axis. The purpose of the TAP tool is to test downhole efficiency of the WHC, speed correct and smooth downhole log data, and test downhole efficiency of the wireline and drillstring
compensators. Continued mechanical design of telemetry and battery chassis and testing of the telemetry on the ship wireline was completed during the Leg 179 portcall in Cape Town. Anticipated deployment of the TAP system is on Leg 181.

Third-Party Cross-Over

The third-party cross-over is a device that will facilitate fast and secure connection of a third-party logging tool to a Schlumberger cable head. It replaces the current connection where the Gearhart-Owen cable head is utilized and will significantly reduce the time and safety problems encountered when deploying a third party tool. Drawings were generated for the cross-over which were also sent to Woods Hole Oceanographic Institution (WHOI) for the fabrication of parts needed to adapt to their third party VSP tool. The cross-over is planned to be deployed on Leg 179.

SWD

The Seismic-While Drilling (SWD) system is a NSF-funded development in conjunction with WHOI to measure drill bit vibration on sea-bottom OBS's deployed during on Leg 179. The SWD system will also be used to measure drill string vibrations for evaluation of heave compensation effectiveness and for future drilling innovations. Manufacturing, testing, and demonstration of the system were completed on schedule during the Leg 179 Portcall in Cape Town.

Acceleration-at-Bit

Existing downhole and data acquisition equipment have been redesigned to measure accelerations of the drill string to evaluate heave compensation effectiveness and implement future MWD technologies. Plans have been coordinated with TAMU engineering and are scheduled for initial testing in late FY98.

Drydock Operations

ODP Logging Services drydock plans include general maintenance and enhancements of shipboard facilities and equipment, an upgrade of existing space in the Downhole Measurements Lab, and the replacement of the Schlumberger Maxis unit with a state-of-the-art modular PC-based data acquisition unit.

IV. SHIPBOARD LOG ANALYSIS

Inmarsat-B

The Inmarsat-B system on loan to BRG since October 1996 was removed from the ship at the Capetown II portcall and returned to the SeaNet consortium via sea freight. The unit was replaced with equipment purchased jointly between TAMU and
LDEO-BRG. LDEO’s satellite data transmission capabilities entered into the production phase during the reporting period. Log data and graphic files have been routinely sent between the ship and shorebased processing center at LDEO. Transfer rates have been a fairly constant 6.5 kb/sec. Procedure manuals have been assembled to ensure the continued success of this joint initiative with TAMU.

Core/Log Image Correlation Project

Digital scanning of the whole round cores using the DMT (German) scanning system was successfully completed during Leg 176. The DMT core scanning equipment was shipped from Cape Town to Germany following extensive use on the leg where approximately 92% of the recovered core was scanned. A total of 14 GB of data was stored on CD-ROM in bitmap format (BMP).

Transformation of BMP files to JPEG format has been completed and the data distributed to the Leg 176 shipboard participants. The conversion includes a more than 50% compression of the data files (originally about 14 GB); the data now fit on two CD-ROMs. Ten shipboard party scientists have requested the core and log image data to date which will enable orientation of structural features observed in the core.

Core Log Integration Platform (CLIP)

Splicer v.2.0 has now sailed on Legs 167, 172, 174, 175, and 177. Splicer v.1.0 or 2.0 has been deployed on a total of twelve legs thus far. On-line help has been partially updated to reflect V2.0 improvements, but more text needs to be added to reflect the many new features.

Splicer v.2.0 was distributed to the following scientists over this period:
Dr. Sara Harris (OSU)
Dr. Michael Schaff (Shell Oil)
Dr. Sean Higgins (LDEO)

Oracle client-server formats, codes, and passwords to the Janus database were received from Layne Westover at ODP. These files will allow us to begin implementation of the Oracle query module to access Janus data directly from within Splicer.

Coding efforts during this period focused on development of the core-log depth integration software product Sagan. The main research strategy of Sagan is to provide the research tool for linking core and log depths at decimeter resolution. We have completed a skeleton version of Sagan which performs the essential core-log depth matching procedures. The user can read in core and log data and perform smooth, decimate, and culling procedures to modify data. For the core data, Sagan can manage up to 10 holes of core data, 5 data types, and a (practically) infinite number of cores and data points. For the log data the user can read in a single log reference curve, and up to three ancillary log curves, such as logging speed, cable tension, and hole caliper.
New Sagan code developments include successful implementation of the “autocorrelation” routine which defines a 2-D correlation map for variable stretch/compression of core depths (mcd) and full DC offsets of log data. An optimal correlation can be defined using multiple datasets from multiple holes. The result is a color coded “map” showing stretch/compression and log offset values where the core-log correlations are highest. Application of this initial adjustment allows the user to then perform non-linear feature-by-feature correlations within cores. Core-log timelines developed for one core can then be applied across all equivalent mcd depths, of just for individual cores.

Current development plans provide for release of Sagan v1.0 for use on Leg 181, the SW Pacific Gateway.

V. SHOREBASED LOG ANALYSIS

ODP Conventional Data:
The following holes were processed and prepared for inclusion in the database at LDEO-BRG:

Leg 176: Hole 735B
Leg 177: Hole 1093D
Leg 178: Hole 1095B
Leg 178: Hole 1096C
Leg 178: Hole 1103A

FMS processing:
The following holes were processed at the Aix-en Provence (France) processing center:

Leg 174B: Hole 395A
Leg 175: Hole 1081A
Leg 175: Hole 1082A
Leg 175: Hole 1084A
Leg 175: Hole 1085A
Leg 176: Hole 735B

GHMT processing:
The following holes were processed at the Aix-en Provence (France) processing center:

Leg 175: Hole 1081A
Leg 175: Hole 1082A
Leg 175: Hole 1084A
Leg 175: Hole 1085A
Leg 177: Hole 1093D
Leg 178: Hole 1095B, processed for the first time in near real time.
Historic data processing
The following 13 historical ODP holes were processed or revised at LDEO-BRG during the reporting period:
Leg 110: Holes 671C, 672A, and 676A
Leg 111: Hole 504B
Leg 117: Holes 720A, 722B, 723B, 728A
Leg 119: Holes 737B, 738C
Leg 125: Hole 782B
Leg 129: Holes 800A and 802A

VI. DATABASE

The ODP Log Database has been updated through Leg 178, 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 conventional data for both wireline and Logging-While-Drilling (LWD) now exists for all legs, along with any available Initial Reports plots, processing documentation, and file dictionary relative to each hole. Proprietary data now include Legs 173 through 178.

Post-Cruise Distribution of Log Data
Composite logs of the processed data of Leg 176 were mailed to the members of the shipboard party who requested them. Leg 174A-B material to be included in the IR volumes was provided to TAMU prior to the post-cruise meetings.

Database Development
As of the end of May, all conventional log data will have been migrated to the log data base.

At the completion of this work our attention turns to archival of the FMS image data. A program has been developed to convert images from Portable Bit Map (PBM) format (currently used on the log data CD-ROM) to GIF. When this conversion is completed, the ODP scientific community will have easy, on-line access to the FMS images collected since Leg 143 (also the first log data on CD-ROM).

VII. PUBLICATIONS AND REPORTS

ODP Logging Services personnel are participating in the preparation of an AAPG book titled Geological Atlas of Borehole Images. We will be providing examples of the use of
borehole images data from ODP, similar to those proposed in the ODP FMS Atlas project.


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)*, 1998, in press.

Kastens, K., Reagan, M., From Mountains to Monsoons: A Link Between the Solid Earth System and the Climate System, Abstract submitted for the Spring AGU meeting.

Lauer-Leredde, C., Analyse des sédiments non-consolidés: la sonde FICUS, presentation at the University of Toulon-Var.


Lauer-Leredde, C., Pezard, P.A., Robert, C. and Dekeyser, I., Mineralogical association and physical properties of sediments with paleoclimatic implications (ODP Site 798, Japan Sea): a comparative study from core and downhole measurements, paper accepted for the Marine Geology.

Louvel, V., et Galbrun, B, Magnétostratigraphie en forage, Leg ODP 165, Mer des Caraïbes: comparaison diagraphies-mesures sur carottes, poster presentation at "Scéance Spécialisée de la Société Géologique de France" (SGF).

Louvel, V., Dollfus, D. et Abrams, L., Evolution des cycles paléoclimatiques à travers la limite Crétacé-Tertiaire en Mer des Caraïbes à partir de données de diagraphie haute-résolution, poster presentation at SGF.

Louvel, V., Galbrun, B., Adams, L., et l'équipe embarquée du Leg ODP 165, La limite Crétacé-Tertiaire en Mer des Caraïbes (campagne ODP 165): apport des données de diagraphie, poster presentation at SGF.


Revil, A., Pezard, P., Cathles, L.M. et Shosa, S., Barrières capillaires dans les bassins sédimentaires: l'exemple du Site ODP 975, poster presentation at SGF.


10.0 DISCUSSION OF THE TERMS OF REFERENCE FOR PEC V

**Action Sought:**
EXCOM is asked to review the charge (shown in the shaded text below) to PEC V and make recommendations to JOI BoG.

**Background:**
During the life of the Ocean Drilling Program JOI, Inc. is contractually required by NSF to periodically evaluate the management of the Program and the performance of its subcontractors. This evaluation will be accomplished at 2-3 year intervals by a committee of experts appointed by the President of JOI. The President will consult with NSF, the JOIDES EXCOM, SCICOM, and others as appropriate in the formation of the evaluation committee. The Performance Evaluation Committee (PEC) will report to the JOI Board of Governors through the President of JOI. JOI will report the findings of the PEC, along with their response, to NSF.

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**DRAFT**

**FIFTH ODP PERFORMANCE EVALUATION COMMITTEE**

**TERMS OF REFERENCE**

Terms of Reference for the evaluation will embody the following general procedures and criteria:

1. The committee membership will consist of international experts in the fields of science, engineering, and management to be appointed by the President of JOI in consultation with NSF, the JOI Board of Governors, and JOIDES. The committee should be chaired by an eminent scientist who should be knowledgeable about ODP, but not currently active in the program.

2. The committee is charged with addressing the following specific issues, as well as other items considered important by the committee:

   - The progress of the Program toward the achievement of the major scientific goals outlined in the ODP Long Range Plan, and the cost effectiveness and performance of JOI, and its major subcontractors, in achieving these goals.

   - The effectiveness of mechanisms in place for making budgetary decisions in the context of the scientific priorities of the Program and projected budgetary constraints, and the potential of current strategies for seeking additional avenues of funding for the Program.
The operation of the new JOIDES advisory structure, including proposal evaluation and selection, short- and long-term planning, and provision of technical advice to JOI and its subcontractors.

The progress of the present Program in preparing for a new scientific ocean drilling program beyond the year 2003.

(2) The committee will be briefed by the Chairman of the JOI Board of Governors and/or the President in advance of any scheduled performance evaluation. Following completion of the evaluation and receipt of subcontractor comments and plans, the committee will report its results to the JOI Board of Governors. JOI will provide sufficient funds and support staff for the Performance Evaluation Committee to carry out its work.

(3) The committee will decide its own interview process. It is expected that the committee will visit JOI Headquarters in Washington, DC, the JOIDES Office, and the major subcontractors at TAMU and LDEO. The committee may wish to interview selected members of the JOIDES advisory structure and the ODP community. The committee will have the right to ask for any reports or other information which it deems necessary.

(5) The committee will transmit in writing to the subcontractor being evaluated the scope and procedures of the evaluation, together with any questionnaires or questions to be answered. Copies of such correspondence will be furnished to the President of JOI who will keep the Board of Governors informed.

(6) After completion of each evaluation, the Chairman of the PEC will discuss the committee's findings with the senior official of the subcontractor and/or the subcontractor's staff, as is mutually agreed. This discussion and its content shall be communicated to the President of JOI, who shall in turn inform the Board of Governors.

(8) Within two months of completion of site visits, the Chairman of the PEC will submit the Performance Evaluation Report to the President of JOI. The report should consist of a descriptive section outlining activities, a section dealing with observation and impressions, and a section on conclusions and recommendations. The report will be accompanied by an executive summary.
(9) The report will be transmitted to the subcontractors with a request for written comments, including plans for any action required. The President of JOI, after receiving the subcontractors' comments and plans, will arrange with the Chairman of the PEC to present the final report and implementation recommendations to the Board of Governors. The President will then transmit a copy of the report and implementation plans to NSF, the JOIDES EXCOM and SCICOM. This should occur within two months after receipt of the report from the Performance Evaluation Committee. Those recommendations requiring consultation with EXCOM and NSF will be reviewed with these organizations prior to implementing action.

The foregoing procedures for performance evaluation will be refined and/or modified as experience is gained. The ultimate objective is to achieve a reliable and effective evaluation system that will best serve the scientific community, NSF and JOI.
12.0 PLANNING FOR IODP
12.1 EXCOM LETTER TO THE IODP IWG AND THE IWG’s REPLY.

Action Sought

EXCOM is asked to review and comment on the IWG reply to the letter from EXCOM to the IWG.

Background

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 is composed of organizations and/or funding agencies that are interested in IODP. In a letter to the EXCOM Chair, the IWG asked for assistance in science, technical and budgetary planning. In response, a mechanism for the provision of planning advice from JOIDES to the IWG was presented to, and approved by, EXCOM.

EXCOM Consensus 98-1-13

By consensus, EXCOM (1) approves the proposed general structure presented by the SCICOM Chair for providing short-term scientific and technical advice for IODP planning; (2) recommends the utilization of JOI and appropriate members of the JOIDES advisory structure to assist IWG in determining IODP budgetary and management requirements; and (3) agrees to the establishment of formal liaison relationships between EXCOM and IWG.

In a letter of response to the IWG, the EXCOM Chair, Bob Detrick, tasked SCICOM with a number of items, including (1) the formation of a conference Organizing Committee for a major IODP scientific conference to be held in the Spring of 1999, (2) the establishment of a Seismogenic Zone PPG, and (3) the organization of an *ad hoc* drilling technology workshop.
1. Mechanism for short-term advice for planning IODP
February 3, 1998

Dr. G. Michael Purdy
Director
Division of Ocean Sciences
National Science Foundation

Mr. Tsuyoshi Maruyama
Director
Ocean and Earth Division
Science and Technology Agency

Dear Sirs,

At its January meeting in Tucson, Arizona EXCOM discussed your letter of September 30th, 1997 requesting assistance with scientific planning, technical advice, and budgetary requirements for an Integrated Ocean Drilling Program (IODP). EXCOM recognizes the importance and necessity of this planning effort, and both JOI and the JOIDES advisory structure are eager to assist the International Working Group (IWG) in helping to establish a new IODP. Below I address each of the three areas identified in your letter of September 30th.

Scientific planning
EXCOM approved a timetable for a major IODP scientific conference to be held in the Spring of 1999. While recognizing that this conference should build upon the results of the 1997 CONCORD meeting, EXCOM felt that this meeting should not focus exclusively on non-riser drilling, but should address the broader scientific goals of an IODP utilizing both a riser-equipped drillship and a non-riser drillship or alternative platforms. The goal of this meeting would be to lay out the overall plan for a decade or more of scientific drilling beyond 2003. SCICOM has been asked to form a conference Organizing Committee at its March, 1998 meeting. There will be a call for White Papers from the international drilling community in July 1998. In early December, 1998 the Organizing Committee will meet to finalize the structure of the conference based on the input received in the White Papers. We expect a final conference report will be available by Fall 1999.
Following the recommendations of the CONCORD meeting, EXCOM also recognizes the need for shorter-term scientific planning, site selection and site characterization in order to be prepared at the onset of IODP for a comprehensive study of an active seismogenic zone in a subduction zone system utilizing riser-type drilling. EXCOM has therefore tasked SCICOM with establishing a Seismogenic Zone PPG to address the many issues related to this "seismogenic zone experiment".

Technical advice and planning
EXCOM recognizes the need for a better definition of the required technical capabilities of both a deep-water riser-type vessel and non-riser ship(s). This must obviously be done in parallel with the scientific planning described above. Thus EXCOM approved a plan, proposed by JOI, to use the results of the Spring 1999 IODP scientific conference to develop a conceptual design for a ship/platform that addresses the non-riser drilling requirements of IODP. This conceptual design will provide the basis for an RFP for the design of a non-riser vessel which would issued by JOI in summer 1999.

EXCOM also recognizes the rapid development of deep-water drilling capabilities within the exploration industry, and the need for close consultation with industry in the definition and development of the technical requirements for IODP. EXCOM has therefore tasked SCICOM with organizing an ad-hoc IODP Drilling Technology Workshop with engineers and scientists from industry and academia. This workshop has two main goals: (1) identify the most important technical and infrastructure issues which must be addressed in planning for IODP, and (2) suggest the most effective mechanisms by which these questions can be addressed. We anticipate that this workshop will be held in the Fall of 1998.

Budgetary planning and infrastructure needs
EXCOM recommends the use of JOI, and appropriate members of the JOIDES advisory structure, to assist IWG in determining budgetary and management requirements, and infrastructure needs, for IODP. JOI, and its subcontractors, have detailed knowledge of operating costs and personnel requirements for a wide range of drilling and logging services, as well as data management and core curation needs.

Participation in the IODP planning activities outlined above will entail expenses beyond those budgeted for ODP activities by various member countries. IWG will need to make provision, through the national funding agencies represented on this committee, for additional funds to allow for participation in these IODP planning activities.

During the IODP planning process over the next few years, it will be necessary for the IWG and JOI/JOIDES to work very closely together. To facilitate communication between these groups, EXCOM recommends that formal liaisons be established between the IWG and EXCOM. We suggest that the EXCOM Chair serve as the EXCOM liaison to IWG and attend each of its meetings, and we request that IWG appoint a formal liaison to EXCOM.
We look forward to working with the IWG in tackling the many scientific, technical and organizational issues associated with the establishment of a new scientific ocean drilling program beyond 2003. I hope the decisions made at our meeting in Tucson, outlined in this letter, are a good first step toward an IODP.

Dr. Robert Detrick
EXCOM Chair

cc: N. Pisias, Interim ODP Director
    S. Humphris, SCICOM Chair
Dr. Robert Detrick  
JOIDES EXCOM  
Department of Geology & Geophysics  
Woods Hole Oceanographic Institution  
Woods Hole, MA 02543

Dear Bob:

We are pleased with the response by the JOIDES EXCOM and JOI to the request for assistance with scientific planning, technical advice, and budgetary requirements for an Integrated Ocean Drilling Program (IODP). The International Working Group (IWG) anticipates a productive joint effort to establish a new scientific ocean drilling program beyond 2003. To prevent any confusion or misunderstanding regarding the major points of your letter, we provide our understanding of the proposed activities below.

Scientific planning

1) The IODP scientific conference to be held in the spring of 1999 will complement the results of the 1997 CONCORD meeting. The conference will not focus exclusively on non-riser drilling but will address broader scientific goals of an IODP with both riser and non-riser drilling platforms. The goal of the meeting is to examine and articulate the science and drilling requirements not covered at CONCORD and provide recommendations integrating the results of both conferences. The report will provide a scientific basis for continued technical and facilities planning and assist with developing implementation plans in the future.

2) The Seismogenic Zone DPG will be a standard JOIDES DPG responsive to the recommendation of the CONCORD meeting.

Technical advice and planning

1) The IODP scientific conference proceedings and recommendations will be used to develop a conceptual design for the second ship/platform to address scientific goals of an IODP with both riser and non-riser drilling platforms. The conceptual design for the second ship (non-riser) may be developed through an RFP process in the summer of 1999.

2) SCICOM will organize and convene in Fall 1998 an ad-hoc IODP Drilling Technology Workshop with scientists and engineers from industry and academia. The goal is to identify key technical and infrastructure issues and suggest mechanisms to address the issues. The IWG, in consultation with JOIDES, JOI, and JAMSTEC, will develop procedures to address all critical issues.
Budgetary planning

We will continue the informal working group for program cost estimates identified in our September 1997 letter with appropriate JOIDES and IWG representatives included. The next meeting of the working group should follow the IODP Drilling Technology Workshop with a focus on the budgetary implications of the workshop recommendations.

We agree formal liaisons should be identified between IWG and EXCOM to promote communication and to assist in coordinating planning actions. We will identify an IWG liaison to EXCOM at our next meeting in June.

Thank you for the comprehensive response to the request for assistance with IODP planning. The challenge is great but so too are the scientific records from continued scientific ocean drilling in the next century.

Sincerely,

G. Michael Purdy
Director
Division of Ocean Sciences
National Science Foundation
United States of America

Tuyoshi Maruyama
Director
Ocean and Earth Division
Science and Technology Agency
Japan
12.0  PLANNING FOR IODP


12.2.1 1999 CONFERENCE ON THE SCIENTIFIC OBJECTIVES OF OCEAN DRILLING IN THE 21ST CENTURY

**Action Sought**

EXCOM is asked to review and comment on SCICOM’S response to EXCOM Consensus 98-1-12.

**Background**

In January 1998, EXCOM tasked SCICOM with setting up a scientific conference in Spring 1999.

**EXCOM Consensus 98-1-12**

By consensus, EXCOM (1) approves the timeline proposed by Nick Pisias, Acting Director of ODP, for an IODP scientific conference in spring 1999 and tasks SCICOM with organizing this conference; and (2) approves the timetable for the design and issuance of an RFP for a second ship/platform for IODP.

At its March meeting, SCICOM reviewed the timetable that had been presented to EXCOM by N. Pisias, set up an infrastructure for the planning and completion of a scientific conference, developed a mandate for the Organizing Committee, and selected an Executive Group to begin the planning process.

**PROGRESS REPORT ON THE ORGANIZATION OF AN IODP SCIENTIFIC PLANNING CONFERENCE IN SPRING 1999**

1. Infrastructure for the Planning and Execution of a 1999 Scientific Ocean Drilling Conference
The following flow diagram delineates the steps in organization and execution of the conference:

**Planning Mechanism for the 1999 Conference**

- **Executive Group of the Organizing Committee**
  - (4-6)
  - Appointed by SCICOM
  - Issue Call for Extended Abstracts
  - Make Preliminary Logistical Arrangements for Conference
  - Review Extended Abstracts and Invite Additional Members on Basis of Breadth of Extended Abstracts

- **ORGANIZING COMMITTEE**
  - (10-16)
  - Determine the Structure of the Conference
  - Invite Participants Based on Their Contributions to the Extended Abstracts
  - Run the Conference and Act as Session Chairs
  - Write up Reports for Each Session or Scientific Theme

- **Executive Group of the Organizing Committee**
  - (4-6)
  - Integrate Write-Ups into a Final Conference Report
  - Submit Final Report to JOI for Publication and Distribution

2. **Mandate of the Organizing Committee**

In Motion 98-1-7, SCICOM set up the following mandate for the Conference on the Scientific Objectives of Ocean Drilling in the 21st Century:
Overall Goal

To set up and coordinate an international conference to define the major scientific objectives of a program of ocean drilling that will span at least the first decade of the 21st century.

Mandate

To define the scientific objectives for future ocean drilling that will complement those already enunciated for riser drilling by CONCORD. This will be accomplished in the following manner:

• a widely publicized call for 1-2 page extended abstracts that describe a drilling project, and define its scientific objectives, their importance, and the necessity for drilling;
• development of a conference structure and agenda, based on the input from the extended abstracts;
• selection of members for the Organizing Committee to provide the breadth of expertise dictated by the extended abstracts, and to act as Session Chairs;
• determination of a list of invited participants;
• organization and execution of a Conference in April-May 1999;
• preparation of a final document that defines the proposed new and exciting program of scientific ocean drilling.

Timeline

• April-May: Format definition for extended abstracts
• June: Call for extended abstracts
• September: Deadline for extended abstracts
• October: Selection of additional members of the Organizing Committee
• Development of Conference Structure
• January: Status report to EXCOM
• April-May: Conference
• June: Publication of final report

Membership

SCICOM will appoint an Executive group of the Organizing Committee who will initiate the call for extended abstracts and make preliminary plans for the Conference. This group will consist of 4-6 international scientists who represent a range of expertise, have good organizational skills, and excellent and timely writing ability.

Once the extended abstracts are reviewed, the Executive group will then select and additional group (up to 10) to serve on the Organizing Committee and act as Chairs of
Sessions. These will be selected on the basis of their specific expertise and their ability to run effective sessions. They will be responsible for a written, post-meeting report for their session that will then be integrated with the others by the Executive group.

3. Formation of the Executive Group of the Organizing Committee

SCICOM approved (Motion 98-1-8) the formation of a small Executive Group to begin the planning process. This Group has now been formed and consists of:

- N. Pisias (Co-Chair)
- A. Taira (Co-Chair)
- L. Mayer
- M. McNutt
- H. Okada
- R. Zahn

4. Development and Distribution of a Call for Extended Abstracts

An advertisement has now been developed that calls for extended abstracts for 1 September 1998.

The JOIDES Office has distributed this advertisement, together with a cover letter requesting help in its distribution to:

- Secretariats/Offices of all ODP Partners
- Offices of the major international geoscience initiatives
- every Panel, Committee and PPG members within the JOIDES Advisory Structure.

It will also be published in the JOIDES Journal and several international publications. The ad has already appeared in EOS (5 May 1998) and is scheduled for one more issue.
**Scientific Ocean Drilling Needs You!**

**Notice:** To all members of the earth sciences community.

The Ocean Drilling Program will end on October 1, 2003. International scientific cooperative efforts for deep-earth sampling in the marine environment will cease unless our community comes together now to plan a new program for scientific ocean drilling. We've done it before (ODP is the successor to the 1968-1983 Deep Sea Drilling Project) — we can do it again.

**Spring 1999 International Conference:** To define the scientific objectives for a future, multi-platform ocean drilling program with two major vessels. This Conference will target the scientific goals of non-riser drilling and will complement the recent Conference for Cooperative Ocean Riser Drilling. CONCORD defined the scientific initiatives for use of a riser-equipped drilling vessel (the CONCORD report is available at http://mstip1.jamstec.go.jp/jamstec/OD21/CONCORD/resulthtml).

**Respond Today! The Future of Scientific Ocean Drilling is in Your Hands**

**Wanted:** Brief (~1-page) statements of interest that describe a scientific objective, its importance, and the necessity for drilling. Technical details are not necessary. These statements will be used as input to discussions and organization of the Conference. This is your opportunity to indicate your support for future ocean drilling, and influence its scientific direction.

**Deadline:** September 1, 1998.

**Submit To:** JOIDES Office, Department of Geology & Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA 02543, USA; (508) 289-3481; joides@whoi.edu.
27 April 1998

Dear Member of the JOIDES Advisory Structure:

I am writing to request your ACTIVE and AGGRESSIVE assistance in ensuring that the international scientific and industrial communities come together and express their strong support for a program of scientific ocean drilling in the 21st century.

As you are aware, ODP will end in 2003 and, if we are to continue to have a scientific ocean drilling program, it is critical that the international community come together and plan a new program that is exciting and innovative. Consequently, a major, international conference will be held in the Spring 1999 to define the scientific objectives for a future multi-platform ocean drilling program with two major vessels.

A small Executive Group has been set up to begin preparations for this Conference. The members are:

Dr. Nick Pisias (Oregon State University, US) - Co-Chair
Dr. Asahiko Taira (Ocean Research Institute, Tokyo, Japan) - Co-Chair
Dr. Larry Mayer (University of New Brunswick, Canada)
Dr. Marcia McNutt (Monterey Bay Aquarium Research Institute, US)
Dr. Hisatake Okada (Hokkaido University, Japan)
Dr. Rainer Zahn (GEOMAR, Germany)

This group has prepared the attached advertisement requesting that the international community submit statements of interest describing scientific themes that should be objectives of a future ocean drilling program. These statements will be used to add additional members to the Organizing Committee to ensure there is the appropriate breadth of expertise, as well as to determine the organization and sessions within the Conference.

This is THE opportunity for the international community not only to show their strong support for future scientific ocean drilling, but also to influence the scientific directions of a new program. It is critical that we receive a strong endorsement for a new program (as demonstrated by the number of submitted statements) if we are to convince our funding agencies of the need for ocean drilling.

Could you please use the means you feel most appropriate (posters, e-mails, etc.) to distribute this information as widely as possible to your colleagues, both those already involved in ODP and to the community at large, to members of geoscience initiatives in which you are involved, etc. Please do not forget industry contacts as well—the more support and input we can get, the better our planning will be. Please stress the importance of this; if we do not have a strong showing of responses, we won't have a drilling program as a successor to ODP!
This advertisement is also available on our web page (http://www.whoi.edu/joides) and can be downloaded from the JOI web page ((http://www.joi-odp.org) if you would like an electronic copy.

Thank you very much for your help
Best wishes,

Susan E. Humphris
Chair, Science Committee

Encl:
12.0 PLANNING FOR IODP

Action Sought

EXCOM is asked to review and comment on (1) the mandate and goals of the Seismogenic Zone Detailed Planning Group established by SCICOM in March 1998 in response to EXCOM Consensus 98-1-13, and (2) SCICOM’s plans for a Technical and Operations Workshop in the fall of 1998 to provide advice on the most effective mechanisms to determine the technical requirements and infrastructure of IODP.

EXCOM Consensus 98-1-13

By consensus, EXCOM (1) approves the proposed general structure presented by the SCICOM Chair for providing short-term scientific and technical advice for IODP planning; (2) recommends the utilization of JOI and appropriate members of the JOIDES advisory structure to assist IWG in determining IODP budgetary and management requirements; and (3) agrees to the establishment of formal liaison relationships between EXCOM and IWG.

12.2.2 SEISMOGENIC ZONE DETAILED PLANNING GROUP

Background

Following the CONCORD recommendation that the first scientific objective for the riser drilling ship should be an experiment at a seismogenic zone, EXCOM approved the creation of a group to begin planning for this experiment, and asked SCICOM to set up a PPG to address the issues related to a seismogenic zone experiment.
1. Development of a Mandate for a Seismogenic Zone Detailed Planning Group

At its March meeting, SCICOM determined that the development of plans for an experiment at a seismogenic zone was more appropriate for a Detailed Planning Group than a Program Planning Group.

With Motion 98-1-9, SCICOM established the mandate for a Seismogenic Zone DPG as follows:

**Overall Goal**
To define a comprehensive study of an active seismogenic zone that will investigate the physical and chemical processes that control earthquake nucleation and propagation. This will include development of a coordinated drilling plan, and identification of drilling, monitoring, technological, and site survey requirements. This study will be the first project to be undertaken by IODP using the new riser drilling ship.

**Mandate**
To work with other appropriate international geoscience initiatives to:
1. Define the detailed scientific objectives of drilling and monitoring an active seismogenic zone.
2. Develop a coordinated drilling strategy to complete the defined objectives that will likely include an integrated program of non-riser and riser drilling.
3. Identify potential geographic areas as targets for drilling that are in the vicinity of Japan.
4. Determine the site survey requirements both for deep drilling and to maximize the scientific results from seismogenic zone drilling.
5. Determine the drilling technologies/facilities, downhole measurements and sampling, and long-term monitoring that will be required.
6. Solicit proposals for experiments or investigative strategies that might be included.

**Timeline**
* By the year 2000, the PPG will produce a written report of the overall plan and its recommendations for implementation.

2. Formation of a Core Group of Seismogenic Zone Detailed Planning Group

SCICOM approved [Motion 98-1-10] the formation of a core group to begin the planning process by publishing a request for proposals as soon as possible with a submittal deadline on 1 August 1998 as follows:
SCIENTIFIC AND TECHNICAL PLANNING

R. Hyndman (Chair) - Canada
G. Harjes - Germany
S. Kodaira - Japan
K. Brown - US
J.P. Foucher - France

SCICOM expects to augment this group based on proposal submissions at its August meeting.

3. Development and Distribution of a Call Letters of Interest

An advertisement has now been developed (see attachment) that calls for letters of interest by 1 August 1998.

The JOIDES Office has distributed this advertisement, together with a cover letter requesting help in its distribution to:

- Secretariats/Offices of all ODP Partners
- Offices of the major international geoscience initiatives
- every Panel, Committee and PPG members within the JOIDES Advisory Structure.

A preliminary version will be published in the JOIDES Journal and in several international publications (e.g. EOS). SCICOM members have been tasked with actively soliciting input of ideas for experiments or investigative strategies from colleagues and appropriate geoscience initiatives in which they are involved.

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PLANNING FOR SEISMOGENIC ZONE DRILLING - CALL FOR PRELIMINARY PROPOSALS

Planning is underway for a new drilling program to follow the Ocean Drilling Program which ends in 2003. A riser-equipped drilling vessel is envisaged to be one component of this new program and, in July 1997, the Conference on Cooperative Ocean Riser Drilling (CONCORD) in Tokyo, Japan, defined the scientific initiatives that can be addressed with such a capability. That meeting targeted a comprehensive study of a seismogenic zone at a convergent margin as the first project for this vessel to begin in the early part of the 21st Century. Meeting recommendations are available at: http://www.jamstec.go.jp/jamstec/OD21/CONCORD/result.html; requests for a copy of the report can also be made at that site.
ODP encourages the submission of Letters of Interest for experiments or investigative strategies that might be included in a seismogenic zone experiment at a convergent margin. These Letters of Interest will be used to select the Detailed Planning Group that will formalize the strategies to investigate the seismogenic zone. Letters of Interest can include drilling (both riser and non-riser) and coring strategies, downhole measurements or experiments, and long-term monitoring studies. Note that riser drilling operations are limited to a maximum water depth of 2500-3000 m. As the first project of a new vessel, this experiment will take place at a seismogenic zone close to Japan.

Background information, including a workshop report and a science plan for the study of a seismogenic zone is available at http://www.soest.hawaii.edu/margins/Documents.html.

A special deadline of 1 August 1998 has been set for these letters of interest. They should be 3 (but no more than 5) pages long, and should include a brief description of the proposed project and its overall scientific goals, and the types of drilling, data collection, shipboard or downhole measurements necessary. Additional information is available at the JOIDES Office web site (http://www.whoi.edu/joides) or by contacting the JOIDES Office, Geology & Geophysics Dept., Woods Hole Oceanographic Institution, Woods Hole, MA 02543, USA. E-mail: joides@whoi.edu; tel: 508-289-3481; fax: 508-457-2187.

12.2.3 TECHNICAL AND OPERATIONS WORKSHOP TO PROVIDE ADVICE ON THE TECHNICAL REQUIREMENTS AND INFRASTRUCTURE OF IODP.

Background

In a letter to the EXCOM Chair in the autumn of 1998, the IWG of the IODP asked for assistance in science, technical and budgetary planning. In response, a mechanism for the provision of planning advice from JOIDES to the IWG was presented to, and approved by, EXCOM (Tab 17).

In a letter of response to the IWG, the EXCOM Chair, Bob Detrick, tasked SCICOM with a number of items, including the organization of an ad hoc drilling technology workshop to:

1. identify the most important infrastructure issues that must be addressed in planning for IODP;
2. suggest the most effective mechanism by which these questions can be addressed.
The drilling technology workshop was believed to be necessary because JOIDES does not currently have the breadth to tackle some of the technical planning and operations issues for post-2003 scientific ocean drilling.

UPDATE ON PLANS FOR A FALL TECHNICAL AND OPERATIONS WORKSHOP

1. SCICOM Plans

By consensus 98-1-6, SCICOM will set up a Technical and Operations Workshop in the fall of 1998 to provide advice on the most effective mechanisms to determine the technical requirements and infrastructure of IODP.

The JOIDES Office is soliciting input from PPSP, TEDCOM, and TAMU as to whom should be invited. The Japanese IODP Steering Committee has provided the names of two individuals who will be the liaisons to the JOIDES Office in setting up this meeting (S. Takagawa and K. Tamaki. In addition, SCICOM identified three scientists who should attend: K. Suyehiro, J. Natland and G. Moore.

Two locations have been proposed: Houston or Tokyo. The date and location have yet to be finalized.