

TABLE OF CONTENTS

JOIDES EXCOM Draft Minutes  
11-12 December, 1978--Magma Conference Center, Hawaii

<u>Page</u>	<u>Item</u>	<u>Subject</u>
1	113	Introductory Remarks
2	114	Action Items
2	115	Status of Drilling Operations
2	I	Current Drilling
2	II	Logging
2	III	Downhole Experiments
2	116	Future Plans
2	I	1979-81 Plans
3	II	1981+ <i>Challenger</i> Program
3	III	<i>Explorer</i> Program
5	117	Budgets
5	I	FY '79
5	II	FY '80-81
5	III	Non-U.S. Budget
5	118	Initial Reports
5	119	Expanded Membership
6	120	PCOM Report
6	I	IPOD Data Bank
6	II	Endorsing and Sponsoring Meeting and Sessions
6	III	Panel Membership
7	121	Future Meetings
7	122	Note of Thanks
Appendix I		Outline of Possible JOI, Inc. Submission to NSF Blue Ribbon Panel
Appendix II		Factors to be Considered in Planning for <i>Explorer</i> Drilling
Appendix III		Some Thoughts on Revision of JOIDES Panel Structure

**ACTION ITEMS: JOIDES EXCOM Draft Minutes**

**11-12 December, 1978--Magma Conference Center, Hawaii**

<u>Page</u>	<u>Item</u>	<u>No.</u>	<u>Responsibility</u>	<u>Subject</u>
2	115	II	DMP	Ship motion on logs
3	116	I	PCOM	'79-81 pert chart
4	116	III(B)	PCOM	Panel reorganization
6	120	I	PCOM	Data Bank Portfolios
6	120	II	PCOM	Sponsorship of Symposium
6	120	III(B)	OPP	Panel size

JOIDES Office  
Woods Hole Oceanographic Institution  
Department of Geology and Geophysics  
Woods Hole, MA 02543

DRAFT MINUTES

JOIDES EXECUTIVE COMMITTEE MEETING  
11-13 December, 1978--Hilo, Hawaii

Present: A. Maxwell, Chairman (WHOI)  
N. Bogdanov (USSR)  
H. Durbaum (FRG)  
W. Hay (RSMAS)  
R. Heath (Oregon State)  
C. Helsley (HIG)  
J. Knauss (URI)  
W. Merrill (Texas A&M)  
C. Merdinger (SIO)  
N. Nasu (Japan)  
M. Peterson (DSDP)  
R. Sternberg (U. Wash.)  
M. Talwani (LDGO)  
P. Twinn (UK)

J. Heirtzler, PCOM (WHOI)  
S. O'Connell, JOIDES Office (WHOI)  
P. Wilkniss (NSF)

Guests: J. Clotworthy (JOI, Inc.)  
V. Stepanov (USSR)

113 INTRODUCTORY REMARKS

The agenda was accepted.

Minutes of the August, 1978 meeting were accepted with the following correction:

110 Expanded Membership in JOIDES, line 8, should read:

*which concerns voting procedures, may have to  
be modified if new members . . . . .*

BUNDESANSTALT für  
GEOWISSENSCHAFTEN und  
ROHSTOFFE, FEDERAL  
REPUBLIC of GERMANY

UNIVERSITY of CALIFORNIA at  
SAN DIEGO, SCRIPPS INSTITUTION  
of OCEANOGRAPHY

CENTRE NATIONAL pour  
L'EXPLOITATION des Océans,  
PARIS

COLUMBIA UNIVERSITY, LAMONT-  
DOHERTY GEOLOGICAL  
OBSERVATORY

UNIVERSITY of HAWAII, HAWAII  
INSTITUTE of GEOPHYSICS

UNIVERSITY of MIAMI, ROSENSTIEL  
SCHOOL of MARINE and  
ATMOSPHERIC SCIENCE

NATURAL ENVIRONMENT RESEARCH  
COUNCIL, LONDON

OREGON STATE UNIVERSITY,  
SCHOOL of OCEANOGRAPHY

UNIVERSITY of RHODE ISLAND,  
GRADUATE SCHOOL of  
OCEANOGRAPHY

TEXAS A&M UNIVERSITY,  
DEPARTMENT of OCEANOGRAPHY

UNIVERSITY of TOKYO, OCEAN  
RESEARCH INSTITUTE

USSR ACADEMY OF SCIENCES

UNIVERSITY OF WASHINGTON  
DEPARTMENT of OCEANOGRAPHY

WOODS HOLE OCEANOGRAPHIC  
INSTITUTION

## 114 ACTION ITEMS

Item 85, IV (3): The SPPP recommendations were distributed.

Item 107, II: A letter requesting logging funds has been sent to NSF. Funds are not yet committed, but are expected to be forthcoming.

## 115 STATUS OF DRILLING OPERATIONS

### I. Current Drilling

Leg 63 was successfully completed. A complete suite of logs was obtained at Site 471. A post-cruise examination of the logs indicates that possibly a minor gas flow occurred at 471.

Leg 64 is underway. Trials for the punch-corer are underway. Its drill speed exceeds the heave of the ship so that it never pulls back up, and undisturbed sediments can be recovered.

### II. Logging

As stated in section 114, logging funds are expected to be forthcoming. The present contract with Gerhart-Owen will expire at the end of Leg 65. There is a possibility that if the Soviet magnetometer is successful, other Soviet instruments may be employed on subsequent legs.

Information about the logging policy and the importance of logging is now included in the chief scientist's orientation at DSDP. Criteria for logging should be established that takes account of very shallow holes. Log quality and recommendations for improvements recently addressed by the Downhole Measurement Panel were discussed (See Appendix 1, or Item 248 I, A-- November PCOM Minutes). In addition, the DMP was asked to comment on the effect of ship motion on log quality.

### III. Downhole Experiments

Three downhole experiments are planned for Leg 65, requiring seven to ten days of shiptime and seven extra people. It was suggested and favorably received that, in the future, blocks of time be set aside for these experiments and for logging, so that they don't appear to be detracting from drilling time. The PCOM will continue to review all requests for downhole experiments. When approved, the experiments must be coordinated with the rest of the program through the chief scientists and DSDP with whom the final responsibility lies.

## 116 FUTURE PLANS

### I. 1979-81 Plans

The 1979-81 CHALLENGER extension will consist of ten legs in the Atlantic. The track for these legs was distributed with the July PCOM

Minutes (p. 15a), and is included on page thirty of the *JOIDES Journal*, Vol. IV, #3. Presently the only suggested addition is an ocean crust transect to locate the major geochemical boundary south of the Azores and trace the direction in which it runs from the ridge crest.

Site surveys are planned for the South Atlantic this spring and summer.

The PCOM was asked to make a pert. chart to include site and regional surveys for the two-year extension.

Twinn stated that the top 100 m of sediment are valuable for radioactive waste disposal research.

## II. 1981+ *Challenger* Program

The PCOM program was reviewed. No further action will be taken until the status of the *Explorer* program is better known.

## III. *Explorer* Program

### A. Document on Future of Drilling vis-a-vis Other Reports Recently Issued

A brief meeting of the U.S. JOI institutions took place in Los Angeles on Saturday, 9 December, 1978. One of the main items discussed was the writing of a document to comment on the place of deep sea drilling in the 1980's vis-a-vis other goals in marine geology and geophysics in the U.S. Several preliminary attempts to write this document over the previous few weeks were not considered satisfactory.

After some discussion, R. Heath and W. Hay were asked to provide an outline of a document. That was done and their outline discussed (Appendix I). A final document will be completed by T. Davies during the week of 18 December, so it will be available to the National Science Foundation "Blue Ribbon" Panel by mid-January.

The document will be short and include scientific and technical goals and benefits, plans to implement these goals, and the costs.

### B. *Explorer* Program Planning

It was suggested that the PCOM proposed preliminary *Explorer* ship track is too site specific, and that it be modified to consist of only broad areas of scientific interest at this time. It was also indicated that some (possibly short) riser drilling be done in the early part of the program in the Pacific.

Discussion centered around most effective ways to plan for *Explorer* drilling. Appendix II contains an outline of some points to be addressed during planning for an *Explorer* program.

*Helsley* moved and *Knauss* seconded that the EXCOM request the PCOM to:

1. Consider complete reorganization of JOIDES panel structure (see Appendix III).
2. Provide recommendations for implementation of this reorganization.
3. Provide EXCOM with plans for such a reorganization at their next meeting.

Passed unanimously.

It is expected that the transition would occur in FY '80-81 time frame.

*Explorer* planning should include plans for extensive geophysical surveys (possibly about 10% of the cost of drilling the holes) to allow the best possible sites to be selected. Regional surveys should be completed about 24 months before drilling, and site surveys about 10 months before drilling.

#### C. Technical Developments and Capabilities

An interim report by the National Academy of Engineering, "Engineering for Deep Sea Drilling for Scientific Purposes" was distributed. This report did not "identify any insurmountable technological, safety, or environmental barriers to a continuation of deep sea scientific drilling," and it supported a surface drilling vessel as the most technically feasible drilling platform. The report recommended that specific drilling, coring, and program information be available. This would enable the necessary technical capabilities to be developed within the required time frame. The Executive Committee asked Peterson to develop these details more specifically for the Academy Committee, noting that criteria consistent with the proposed scientific plan had been reviewed earlier.

Through negotiations with Lockheed and Global Marine, the *Explorer* is now being instrumented to determine its at-sea characteristics in detail. Therefore, changes to the previously stated *Explorer* characteristics (Appendix I, August, 1978, EXCOM Minutes) may be forthcoming soon. These might include 5.5 km of penetration with BOP, specifications about the minimum acceptable core diameter, and worst sea conditions for each of the panels.

The Donnhausier Marine Study is completed. Five areas were reviewed for *Explorer* capabilities. This study will be given to the Blue Ribbon Committee.

#### 117 BUDGETS

##### I. FY '79

DSDP is still operating under a phase-down budget. The major budget issue is the money for logging and some engineering developments.

##### II. FY '80-81

The budget for the *Challenger* extension and feasibility studies for the *Explorer* are included in the budget that will be submitted to Congress in January.

##### III. Non-U.S. Budgets

The United Kingdom has agreed to participate in the *Challenger* extension. The other non-U.S. countries have not come to a final decision.

#### 118 INITIAL REPORTS

Volume 47, Parts I and II, will be shipped to the printer in February. Volume 48 is complete except for the logging chapters. It will undergo co-chiefs' review in mid-January, and should be shipped to the printer in February. Volume 50 has been delayed.

Volumes 51-53, the megaleg, has 75 out of 88 chapters completed and should be shipped at the end of May.

#### 119 EXPANDED MEMBERSHIP

The University of Texas, Marine Science Institute, is the only application for membership. JOI, Inc. has tabled this application until the future of the drilling program is more clear. Durbaum noted that with the current U.S./non-U.S. membership distribution that the U.S. members could not pass a resolution and that this should be a consideration in new membership. Twinn stated that the U.K. was opposed to associate membership, that its 1979-81 extension commitment was based on the assumption that membership would remain unchanged, but that if expanded membership meant only one U.K. participant for each leg that the U.K. would not mind.

Concern was generally expressed that the quality of the science be maintained and that the membership be kept to a manageable level.

Talwani stated that the Peoples Republic of China may apply for membership.

I. IPOD Data Bank

The IPOD Data Bank is funded through JOI, Inc., and therefore JOI, Inc. is responsible for its effective operation.

The publication of site survey portfolios was discussed. It was generally agreed that it would be useful to have the data available in a coherent form, but the necessity for publication was questionable.

*Heath moved and Hay seconded that the PCOM obtain a complete portfolio mock-up, along with a plan budget and rationale for distribution, approve it, and submit it to EXCOM.*

Vote: 9 for, 1 against. Passed.

II. Endorsing and Sponsoring Meetings and Sessions

JOIDES policy regarding endorsing and sponsoring meetings was discussed.

The request of PCOM and LePichon for JOIDES co-sponsorship of two colloquia at the 26th Geological International Congress (Paris, 7-17 July, 1980) was discussed. EXCOM wanted clarification of JOIDES policy and specifically what LePichon meant by co-sponsorship, since JOIDES had no say in the organization or invited speakers.

EXCOM felt that a joint scientific meeting to discuss JOIDES-ROSE-submersible results in the Tamayo-Rivera Fracture Zone area would be worthwhile after 1979, if PCOM had a role in organizing it.

III. Panel Membership

A. Ocean Crust Panel

*P. J. Fox was unanimously approved as chairperson. P. Johnson was unanimously approved as a new member, effective after their next meeting. D. Kent will be asked as new member if Johnson refuses.*

B. Ocean Paleoenvironment Panel

*R. Douglas was approved as the new chairperson, when Lancelot resigns after their September meeting, but the panel was asked to assess the impact of additional membership. There are two members from SIO and possibly a cut might be made there.*

C. Site Surveying Panel

*J. Jones was unanimously approved as chairperson.*



121 FUTURE MEETINGS

The following meetings are scheduled:

6, 7 April	Houston
14, 15, 16 August	Iceland
26, 27, 28 November	U.S.S.R.

122 NOTE OF THANKS

A note of thanks was extended to Helsley and the University of Hawaii for hosting the meeting.

## APPENDIX I

### Outline of Possible JOI, Inc. Submission to NSF Blue Ribbon Panel Set Up to Assess the Recommendations of the FUSOD and MARGINS Reports in Light of Realistic Budgetary Constraints and National Priorities of the 1980's

(Order of these points will be altered)

1. What are the major research initiatives in marine geology and geophysics proposed or underway for the 1980's?
  - a.) Addressed in reports listed on page 8 of Heirtzler document. Also in U.S. Navy Monterey Workshop, and in Alton Jones post-IDOE Workshop (COMS Report).
  - b.) Partial list (documents not at hand)
    - i. Crustal formation and evolution
    - ii. Nature and origin of lithosphere-asthenosphere boundary
    - iii. Nature and evolutionary development of passive ocean-continent boundaries
    - iv. Nature of plate interactions at active boundaries
    - v. Fluid dynamics of sedimentation in shelf and deep-water environments
    - vi. Geochemical fluxes at the sediment water interface
    - vii. Burial diagenesis of inorganic and organic sedimentary components
    - viii. Influence of mid-ocean ridge hydrothermal circulation on heat transfer, crustal properties, and oceanic chemistry
    - ix. Spatial character and frequency domain properties of Pleistocene climatic and paleoceanographic changes
    - x. Tectonic and paleoceanographic evolution of the earth's surface from the break up of Gondwanaland until today.

2. In what areas do these initiatives impact major societal problems?
  - a.) In the establishment of a scientific basis for evaluating potential hydrocarbon resources beyond the continental shelf.
  - b.) In the establishment of a technical capability to exploit deep-sea non-renewable resources.
  - c.) In assessing the capability of the deep seabed to contain anthropogenic wastes of extreme toxicity.
  - d.) In assessing the intermediate to low frequency natural variability of climatic change.
  - e.) In contributing to the development of a predictive understanding of major natural geologic hazards (earthquakes, volcanic eruptions).
3. What are the U.S. Government agency interests and funding possibilities?
  - a.) USGS (T. Edgar)--Margin structure and evolution, geophysical studies; outcrop studies (submersibles); shallow and deep stratigraphic drilling (including *Explorer?*).
  - b.) NOAA (A. Malahoff)--Shelf sediment dynamics; slope/rise sedimentation, diagenesis and stability; detailed geomorphic mapping (fan beam) and interpretation of continental margins and adjacent deep-sea structural features; joint studies of non-U.S. (particularly third world) continental margins (International Sea Grant).
  - c.) USN (G. Hamilton)--Deep crustal and sub-crustal structure as inferred from low-frequency sound propagation; deep-sea sediment dynamics and stability.
  - d.) DOE (G. Ostlund, W. Broecker)--Flux and dissolution of marine carbonates (R. Heath, R. Anderson). Depositional history and chemical/physical properties of deep-sea "red" clays. Development of advanced (deep water) drilling technology.
  - e.) NSF-IDOE (B. Malfait) MANOP; CENOP; shelf dynamics; SEATAR; etc.
  - f.) NSF--Oceanography (R. Wall) LEBBLE; etc.

- g.) NSF--Earth Sciences (P. Wilkniss) OSCP, etc.
  - h.) NASA--Deep-sea sediment dynamics.
4. What are the possible non-U.S. interests and involvements?
- a.) ?
5. What are the technological requirements and implications of the 1980's initiatives?
- a.) Seismic systems with enhanced penetration and resolution capability: 1b i, ii, iii, iv, vii, x.
  - b.) Deep-sea drilling--"Challenger" capability: 1b vi, vii, ix (if core quality upgraded), x.
  - c.) Deep-sea drilling--"Explorer" capability: 1b i (reverse circulation), iii (deep penetration, riser), iv (water depth, deep penetration), viii (reverse circulation), x (high southern latitudes).
  - d.) Long-term in situ observations and manipulative experiments: 1 b i, iv, v, vi, viii.
  - e.) Covers to collect long (50-200 m) undisturbed cores of unindurated sediments: 1b vi, vii, ix. (Perhaps add section here showing why FUSOD and Bally Report are not in conflict.)
6. Is the available manpower pool adequate to handle the 1980's initiatives?
- a.) Based on the present level of activity (about \$40 million per year in NSF/ONR/DOE excluding DSDP), part of which will be replaced by or continue into 1980's programs, on the wide national and international participation in DSDP/IPOD, on the involvement of significant non-academic manpower (USGS, NOAA), and on the pool of trained and interested scientists ready to rejoin the field if additional opportunities open up, we believe that all the proposed 1980's initiatives can be staffed.
7. What are the consequences if the "Explorer" program is not implemented? (Perhaps this should be inverted to clearly state advantages if it is implemented.)
- a.) We will not be able to test or further develop the paleo-oceanographic models now proposed or under development.

- b.) We will not be able to test geophysical assessments of the developmental history and resource potential of the continental slope and rise.
- c.) We will fail to develop a technological capability to exploit deep-water hydrocarbon and other mineral resources, even though future economic and strategic developments likely will mandate such exploitations.
- d.) We will not be able to test models of subduction and ocean/ocean or ocean/continent interactions.
- e.) We will not be able to assess the importance of rise-crest hydrothermal activity on newly formed oceanic crust.

## APPENDIX II

### FACTORS TO BE CONSIDERED IN PLANNING FOR *EXPLORER* DRILLING

*Explorer* drilling will have two fundamental differences from *Challenger* drilling:

1. The number of holes for *Explorer* drilling will be far less, and the cost per hole will be far greater.
2. The planning will not be mainly concerned with site selection, but will entail a broader task:
  - a.) Have enough geological and geophysical work (including preliminary shallow drilling in some cases) been done to define the problem to be solved clearly, and to locate the optimum area for the hole?
  - b.) Have site specific surveys been planned and carried out?
  - c.) Are adequate downhole experiments being planned to utilize the hole fully?
  - d.) Are there adequate preparations for examination of the recovered cores?
  - e.) Have the engineering parameters taken into consideration the environment at the site location and the scientific goals for the hole?

Recognizing these differences and recognizing that the sources of non-NSF support for this project (i.e. non-U.S. governments or other U.S. agencies, or both) have not been identified, it is suggested that the overall scientific planning mechanism be carefully evaluated and revised.

### APPENDIX III

#### SOME THOUGHTS ON REVISION OF JOIDES PANEL STRUCTURE

A possible planning mechanism will envisage the creation of possibly ten planning "super" groups (under the Planning Committee) who will be charged with planning for drilling (in the larger context--see Item 2, Page 1, Appendix II). Each "super" group will plan the drilling in a single area. Examples of the areas and the expertise of the "super" group members (most important fields underlined) might be as follows:

1. N.W. Atlantic (margin sedimentary and tectonic problems, paleoenvironment, igneous crust).
2. N.E. Atlantic (margin sedimentary and tectonic problems, paleoenvironment, igneous crust).
3. S. Atlantic (paleoenvironment, margin sedimentary and tectonic problems).
4. High latitudes (paleoenvironment, sedimentary and tectonic problems).
5. N.W. Pacific (trench and back arc sedimentary and tectonic problems, igneous crust, paleoenvironment).
6. N.E. Pacific (sedimentary and tectonic problems, paleoenvironment).
7. Mid-Ocean Ridge (igneous crust, tectonic problems).
8. Caribbean (Sedimentary, tectonic, paleoenvironment, igneous problems).
9. Mediterranean (Paleoenvironment, sedimentary, tectonic, igneous problems).
10. Mid-Pacific (Paleoenvironment, sedimentary, igneous problems).

The "super" groups will be charged with the following tasks:

1. Maintain overview on regional geological and geophysical work--define problems.
2. Identify in timely fashion requirement for added geological and geophysical work.
3. Select sites.
4. Identify in timely fashion requirements for site specific surveys.
5. Identify need for and coordinate planning for downhole experiments.
6. Coordinate plans for examination of recovered cores.
7. Select shipboard scientific party.
8. Establish model hole parameters for continuing input to engineering studies.

The subject panels and the site survey panel may still continue to function, but their main charge will be to assist and advise the "super" groups. It is also possible that more "super" groups will be formed than the areas that will be drilled, and that more sites will be selected than can be drilled.

Finally, the Safety and Pollution Prevention Panel will be retained, possibly expanded from the present one, and given overall charge of passing judgment on each selected site.