JOIDES OFFICE
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M I N U T E S

JOIDES Planning Committee Meeting
11-13 November 1981
Salishan Lodge, Gleneden Beach, Oregon

PCOM Members Present

E. Winterer (Chairman, SIO)
H. Beiersdorf (FRG)
W. Bryant (Texas A&M)
J. Cann (U.K.)
J. Corliss (Oregon State)
J. Ewing (WHOI)
D. Hayes (L-DGO)
J. Honnorez (U. of Miami for W. Schlager)
J. Kennett (Univ. of Rhode Island)
B. Lewis (Univ. of Washington for J. Creager)
K. Kobayashi (Japan)
R. Moberly (HIG)
L. Montadert (France for J. Aubouin)

Y. Lancelot (DSDP - non-voting member)

Not Present: L. Nikitin (USSR)

NSF Liaison: I. MacGregor, S. Gartner

JOIDES Office Liaison: P. Worstell

Guests

A. Ballard (NORDA)
B. Bornhold (Geol. Survey of Canada)
L. Frakes (Monash University, Australia)
R. Hart (Sierra Geophysics for DARPA)
W. Hay (JOI)
G. Keller (Oregon State University)

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14	W. Bryant	Explore ways to publish the "Sedimentary Petrology and Techniques Manual."
15	Y. Lancelot	Instruct shipboard co-chief scientists to prepare article for submittal to Nature within two weeks of docking.
19	E. Winterer	Ask Panel Chairmen to review membership with eye toward balance among discipline (esp. re paleomagnetist).
20	E. Winterer	Ask J. Creager to serve as PCOM liaison to the Information Handling Panel.
26	E. Winterer	Contact N. T. Edgar re possibility of U.S.G.S. support for Leg 84 logging.
27,28	E. Winterer	Solicit nominees for co-chief scientists for Leg 86 from the Ocean Paleoenvironment Panel and the Hydrogeology leg from the Ocean Crust, Inorganic Geochemistry and Downhole Measurements panels.
28	W. Bryant	Solicit for co-chief scientists for ENA-3 leg.
29	Y. Lancelot	Invite suggested co-chief scientists for legs up to Leg 94.
31	Y. Lancelot/ E. Winterer	Complete (dates) of 1982-83 Challenger schedule.
38	E. Winterer	Submit science narrative of post-1983 proposal to NSF in late December or early January.

346 OPENING REMARKS AND PRELIMINARY BUSINESS

E. Winterer opened the meeting thanking Jack Corliss for arranging the attractive meeting facilities at Salishan Lodge. J. Corliss welcomed the Planning Committee to the "watery planet" at Gleneden Beach, Oregon and announced that Bob Duncan would conduct a field trip into the nearby area the day following the meeting (Saturday).

Following introductions, the Planning Committee adopted the proposed agenda.

R. Moberly moved (seconded by J. Honnorez) that the committee accept minutes of the 8-10 July 1981 meeting. The PCOM approved the motion unanimously by voice vote.

E. Winterer noted that the figure appearing on page 6 (8-10 July 1981 meeting minutes) of a crinkle dam is only one of many possible bare-rock drilling schemes and should not be taken as the only possibility.

347 NATIONAL SCIENCE FOUNDATION REPORT

Steve Gartner, NSF liaison to JOIDES, and Ian MacGregor, Chief Scientist, Office of Scientific Ocean Drilling, reported for the National Science Foundation.

I. CONGRESSIONAL VISIT CANCELLED

NSF has cancelled a planned visit by U.S. congressmen and staff to the Challenger following Leg 82 owing to shifts in the congressional calendar, and concerns about what might be construed as "junketeering" during times of great fiscal restraint. The visit had been planned to give new congress members and staff a first-hand view of Challenger and a better understanding of the scientific mission of the program.

II. OFFICE OF SCIENTIFIC OCEAN DRILLING

A. Organization

NSF has created the Office of Scientific Ocean Drilling which reports directly to the Director of the Foundation. It has transferred the functions of the old Division of Ocean Drilling to the new office. The office oversees the operations of the JOIDES/Deep Sea Drilling Project and the Ocean Margin Drilling Program. Key personnel are Allen Shinn, Director of the Office of Scientific Ocean Drilling, Ian MacGregor, Chief Scientist, William Sherwood, Director of Engineering Operations, Sandra Toye, Executive Officer, and Stefan Gartner, Program Associate.

Peter Wilkniss, previously Director of the Office has resigned to take another post within the National Science Foundation.

B. Drilling Plans

In July of 1981 NSF presented an integrated plan to the oil companies calling for (a) early conversion of Explorer for three to five years of

riserless drilling, (b) retirement of Challenger in 1983, and (c) a joint scientific program addressing both JOIDES and Ocean Margin Drilling objectives. The plan was devised to spread the high costs of converting Explorer to a riser drilling and riser and well-control system over a longer period. (See Item 190 in the August 1981 EXCOM minutes for a more detailed summary of the NSF plan.)

On 6 October 1981 the oil companies (previously) contributing to the OMD Program withdrew their financial support after FY 1981. This will delay indefinitely development of ship-borne riser and well-control technology, and thus drilling through continental rise sediments. It will, however, potentially make Explorer available to the entire community for drilling in a riserless mode.

III. FUTURE PLANNING

A. Alternative Plans

Members of the Division are encouraged by the strong support scientific ocean drilling receives in the community and within the Foundation. The demise of the Ocean Margin Drilling Program, however, results in a reorientation of future planning. The withdrawal of U.S. industry from participation in scientific ocean drilling opens the door for non-U.S. participation in all aspects of any future programs, and eliminates restrictions on site selection (as defined in the OMDP).

I. McGregor listed four alternative directions the ocean drilling program could take: (a) terminate scientific ocean drilling at the end of the current Challenger program (end of FY 1983), (b) continue drilling with Challenger until the end of FY 1988 (5-year proposal), (c) develop a program using Glomar Explorer (without riser and blow-out prevention systems) for an undefined term, (d) convert Explorer to full riser and blowout capability.

He noted that NSF and the community strongly support scientific ocean drilling and thus few would support option "a." Option "d" is too costly without the support of the U.S. oil industry; options "b" and "c" are both possibilities and NSF is eager to learn how the community views them.

MacGregor noted that NSF will support only one drilling vessel. Planners must critically evaluate ocean drilling plans and ultimately develop a single program using either Challenger or Explorer.

NSF has contracted a Systems Integration Contractor (Lockheed) to prepare data on cost estimates to convert and operate Explorer for riserless drilling.

B. Timetable

Representatives of the IPOD partners will meet with NSF 23-24 November 1981 to discuss membership agreements.

NSF will meet with the Geological Science Board Panel 18-19 January 1982 to examine the options for continued scientific drilling.

C. Discussion

Items from the ensuing discussion include:

- Although JOIDES has developed a 5-year proposal for Challenger drilling, the demise of OMD has considerably changed the boundary conditions. Planners will need to ensure high-priority OMD science is included and also to investigate the availability and suitability of other platforms. A way to proceed is to develop a single, comprehensive, long-term scientific plan recognizing that many JOIDES and OMD objectives overlap (e.g., the early history of the Atlantic Ocean), then develop two programs to accomplish the science. (One program would suppose use of Challenger, the other the Explorer). The science attainable and relative costs using the two platforms could then be compared. Developing the 5-year Challenger proposal is one necessary step in developing a credible future drilling program.

- If Challenger drilling is to be continued without a hiatus, NSF must have a drilling proposal in hand very soon (December 1981 or January 1982).

- Any hiatus in Challenger drilling would result in the loss of the very favorable contract with Global Marine.

- The community and NSF should investigate means by which certain drilling-related science could be funded as part of the long-term program. At present, except for the U.S. site-survey program, NSF does not supply funds in support of science. Certain tasks needed to enhance the science "fall in a crack." An example is the need for detailed descriptions and interpretations of the DSDP igneous rocks. The Ocean Crust Panel strongly recommends that this work be done, not only to provide better descriptions for potential sample requestors, but to aid in future planning. DSDP's charge, however, is not to support individual scientific programs (i.e., a DSDP scientist to conduct interpretive studies beyond what is required for the initial reports). Yet NSF, at present, is not likely to fund such a study as an individual proposal in favor of more creative science.

- If option "c" were exercised and Challenger drilling terminated at the end of FY 1983, then an 18-month to 2-year drilling hiatus would be necessary during transitional period and conversion to Explorer.

348 DEEP SEA DRILLING PROJECT REPORT

Y. Lancelot reported for the Deep Sea Drilling Project.

I. CHALLENGER OPERATIONS

All the recently drilled legs have been extremely successful. Drilling has demonstrated that complex questions can be resolved by drilling composite sections.

A. Leg 81 (Rockall Bank)

Despite bad weather, Leg 81 achieved nearly all its scientific objectives. The shipboard party drilled four sites (552-554) into (mostly) Eocene and overlying sediments. A significant result of the cruise is that sea-ward dipping reflectors were penetrated at Site 554. They consist of basalt flows apparently interbedded with sediments. The reflectors seen on the profiler records may result from the contrast between lava beds and the sediment interbeds.

B. Leg 82 (Mantle Heterogeneity)

Leg 82, just ending at the time of the meeting, was very successful. Drilling probably raised more questions than it solved, but the existence of mantle heterogeneities was clearly demonstrated. They appear, however,to occur on a scale smaller than originally envisioned. Defining a boundary at the Hayes Fracture Zone is a complex problem. Gabbro and serpentinite found close to the surface at three of the nine sites may indicate complex tectonic movement in the young crust. Widespread small fracture zones may in fact explain these results.

Leg 82 lasted several more days than originally planned (to bring Challenger into port to accommodate the then planned congressional visit). This allowed nine sites to be drilled and thus allowed greater precision in mapping the horizontal distribution of variations in the chemical composition of basalts.

II. FY 1982 BUDGET CUT

A. Overview

NSF has asked DSDP to cut its FY 1982 budget by $1.2 million. The cut imposes serious operating problems on DSDP. Out of the "bare-bones" budget of $24.6 million submitted to NSF for FY 1982, successive reductions by NSF brought the total down to $22.4 million, and after the recent cut only $21.2 million has been allocated. Of that $21.2 million $16 million are irreducible costs (funds already contractually allocated to Global Marine for Challenger operations, plus fuel costs, re-entry cones), thus the $1.2 million cut must come from only $5.2 million DSDP operating costs -- a cut of more than 20 per cent.

Lancelot noted that through reduced (relative to inflating costs) budgets in earlier years most of the "fat" had previously been trimmed from DSDP organization; the current cut would "cut well into the muscle." DSDP must now ensure that the "skeleton" remains intact -- that no permanent damage is done to the Project's ability to fulfill its responsibilities. Owing to the seriousness of the problem, DSDP is obliged to make some hard decisions. It has (or will have):

- eliminated its Information Office and released attached personnel. Preparation of press releases, and handling of public relations affairs will be shared among the entire staff.

- released ten out of 15 student helpers.

- released one illustrator. (Owing to budget cuts the Government Printing Office can only print four volumes in FY 1982.)

- discontinued printing of the Initial Core Descriptions after Leg 75. It also released one person in conjunction with this.

- halted hiring of an additional person in the repository.

- delayed hiring staff scientists. DSDP, however, is severely understaffed in this area. It now has only one staff scientist out of a normal complement of six. DSDP will stagger hiring but still plans to bring in four additional scientists; it will hire one in November (1981), two more January first, and another the first of April. The sixth position will be filled by the return in February 1982 of W. Coulbourn from a one-year leave of absence.

- layed off one cruise manager. DSDP will fill the slot with DSDP engineers and will avail itself of guest cruise operations managers.

- eliminated the shipboard weatherman. GMI seamen will do the weather forecasting.

- cut developmental engineering by about 40 per cent. This may seriously impact developments of specialized coring systems and tools.

- reduced acquisition of new shipboard equipment to zero. DSDP will need to maintain or improve the shipboard equipment in-house. DSDP cannot purchase a mini XRF system.

- halted plans to build an additional core storage facility. The archive halves of the cores will be stored in a more "compacted" fashion and will thus be inaccessible until more space becomes available. Sampling of working halves will not be impaired.

- discontinue the shore-based sediment analysis at DSDP. (Since Leg 1, DSDP has routinely provided grain-size and carbon/carbonate analyses. The LECO (carbon/carbonate analyzer) will go aboard Challenger for on-board determinations.

- reduce the shipboard logging program. (Lancelot noted that the budget cut cannot be accomplished without cutting large items. Reducing the logging program would save about $600 thousand. The PCOM deems this a very serious matter. It is discussed in more detail under Item 350-III, below.

- DSDP will maintain travel and logistical support at about their current levels. Shipments, to and from the ship may, however, be grouped to save shipping costs. This could cause delays in core shipments to the respective repositories.

B. Discussion

The Planning Committee is extremely concerned about the impact the proposed budget cuts will have on DSDP's ability to support the scientific mission.

Members were surprised that DSDP did not protest the cuts immediately with Allen Shinn or the Foundation director. (Peterson, Lancelot and MacTernan do plan to meet with NSF in Washington 23 and 24 November 1981.)

In response to a query, Lancelot noted that DSDP did try to protect the science part of the operation. Engineering and management suffered the greatest cuts. But inasmuch as DSDP is centered on science, any funding reductions will impact scientific activities.

The PCOM noted areas of particular concern.

- Further delay in production of the Initial Reports volumes. If GPO prints only four volumes per year, some volumes could appear up to 50 months after the cruise. The PCOM considers that unacceptable and questions whether NSF is then fulfilling its responsibility to ensure the results are in the hands of the public within a reasonable time.

  The PCOM urges DSDP to maintain a full effort on producing the initial reports volumes.

- Cessation of the Initial Core Description

  DSDP opted to discontinue publication of the Initial Core Descriptions, in part on the basis of a study demonstrating that the ICDs were not widely used. In theory the ICDs provide an early view of the results and a basis on which interested scientists can develop their studies and sample requests. The shipboard hole summaries (even though their distribution is limited), Geotimes, and GSA articles, however, appear to be fulfilling these functions.

  The PCOM expressed some reservation about cessation of the ICDs, particularly in view of probable additional delays in Initial Reports production. If ICD's could not be produced, it urged DSDP to examine other ways to more quickly distribute drilling data and information. The Committee also asks the JOIDES Panels to recommend ways to ensure timely availability of data and information.

  NSF/DSDP will also need to revise its sample/data distribution policy, inasmuch as the present policy makes samples available two months after publication of the ICDs.

- Curatorial Services - Curatorial services are minimal at present. The PCOM would not like to see further reduction of these services.

- Staff Scientists - Lack of adequate staff scientists creates problems through the program, adversely affecting both planning and services. The Planning Committee urges DSDP to hire new staff scientists as quickly as possible.

- Logging - The PCOM is very concerned about possible reduction in logging which is discussed in more detail under Item 350-III, below.

Lancelot emphasized that with the $1.2 million budget cut DSDP will be operating under marginal conditions and will not be able to respond to unusual conditions. Any further cuts would greatly impair DSDP's ability to provide even basic services.

III. ENGINEERING DEVELOPMENTS

A. Potential Length of Drill String

In response to a PCOM query (July 1981 meeting) Lancelot reported on potential lengths of Challenger's drill string. DSDP now has most of the results of the motion versus drill-string fatigue were in hand and can calculate the upper stress limits of the drill pipe. The maximum length of drill string deployable from Challenger is, by contract, 25,000 ft (7.62 km). That is only possible, however, under certain conditions. Factors limiting the length of deployable drill string are (a) age of drill pipe, and (b) heave compensation (or lack of heave).

If "old pipe" comprises 90 per cent of the drill string and the heave compensator is not connected the drill string is limited to 21,000 ft (6 km). In "ideal" conditions with the drill string comprising all new pipe and calm weather, or with the heave compensator connected and functioning perfectly, then the string could comprise 25,000 ft (7.6 km) — the contractual limit. (An additional one thousand feet of drill string may be added to drill string if the heave compensator is used.) New pipe may be stressed to 90 per cent of its yield strength; older pipe would lower the yield strength and thus lower stress limits.

The length of drill string currently deployable from Challenger, then ranges between 6 and 7.6 km.

DSDP is investigating the inclusion of aluminum drill pipe to increase the length of the string -- perhaps to 28,000 feet. Early tests, however suggests some exfoliation in the pipe; Lancelot can give no conclusive figures as yet.

B. Pressure Core Barrel (PCB)

The pressure core barrel is fully operational. Two PCBs will be on board Challenger during Leg 84 (Middle America Trench) where plans call for drilling a site off Guatemala in 2060 meters of water to sample the gas hydrates.

C. Extended Core Barrel

A test conducted on shore of the extended core barrel was very encouraging. DSDP hopes to test the tool at sea during Leg 84.

D. Wireline Re-entry

DSDP continues to work on a fly-in re-entry system. The system will allow entry into DSDP holes to conduct downhole experiments from any oceanographic research vessels.

E. Hydraulic Piston Corer

A heat-flow device, designed by R. von Herzen (WHOI), will be incorported in the nose cone of the hydraulic piston corer. DSDP engineers designed the housing and deployment package and will test the system during Leg 85.

DSDP is also working on the development of an atmospheric chamber piston corer which with its more powerful stroke to penetrate more indurated rocks.

IV. SHIPBOARD PROCEDURES AND EQUIPMENT

A. Word Processor

A word processor is now aboard Glomar Challenger; DSDP will acquire a "sister system" for use at the Project on shore. Preparation of the shipboard hole summaries has become a very large task. The word proceessor will allow faster preparation of the text at sea and its expedient revision on shore for the Initial Reports.

B. X-Ray Fluorescence

CNEXO loaned their XRF van to DSDP for Leg 82 operations, allowing the shipboard scientists to make onboard trace element analyses. Although problems surrounded the continued use of the XRF during Leg 83 they have now been resolved and the van will remain aboard during re-entry into Hole 504B.

C. Shipboard Computer

DSDP has purchased a computer for the ship. It is a multi-task system which will handle on-board gas chromatography as well as digitize seismic, and other, data. DSDP, however, cannot hire the two technicians to man it, as planned, and will have to train and utilize its existing staff.

D. Seismic Systems

Purchase of the shipboard computer was the first step in developing the seismic system. Project people are now working on the digitizing equipment. DSDP has delayed acquiring a source and down-pipe system pending reports on SIO's newly acquired system. Early reports indicate a problem in the mechanics of the water gun source.

V. PUBLICATIONS

A. Initial Reports

Initial Report volumes 1-59, 61, and 63 are published. The Government Printing Office is presently printing volumes 60, 62, and 66. DSDP initiated the system whereby site reports are completed shortly after the cruise with Leg 77 and it is working reasonably well. But owing to budget cuts within DSDP and GPO, DSDP may not be able to accelerate volume production as earlier hoped. Volumes 64, 65, 67, and 68 are scheduled for

publication in FY '82, but DSDP will also move ahead on volumes 69 and 70.

B. Initial Core Descriptions

Initial Core Descriptions are available for Legs 27 to 75, but owing to the FY '82 budget cuts, DSDP will discontinue their production after the ICD for Leg 75. (See also discussion under item 348-II.)

C. Sedimentary Petrology Manual

DSDP has in hand the manuscripts for the Sedimentary Petrology Manual (discussed at previous meetings, see Items 355-VI, 325-V, and 307-II). In view of budget cuts, DSDP cannot ensure its printing during FY 1982. (The Project would, however, be able to complete tables and artwork and otherwise prepare the manual for publication.)

J. Cann moved (J. Kennett) seconded that the PCOM investigate other means to publish the Sedimentary Petrology Techniques Manual.

Vote 12 for, 0 against, 0 abstain. The motion passed unanimously.

ACTION/ Bryant — W. Bryant agreed to explore publication possibilities and will report to the PCOM at its next meeting.

D. Seismic-Survey Publication

DSDP will continue to prepare the site-survey volume for publication, but will probably request funds from JOI for its printing. (The data were compiled by the IPOD Site-Survey Office (L-DGO) from surveys run between 1975 and 1978.)

E. DSDP User's Guide

DSDP still hopes to publish a user's guide -- a well illustrated brochure explaining access to DSDP data and services -- but will delay its production and printing pending available funds and time.

F. News Articles

1. Nature

Nature has offered to run a "News and Views" article immediately following each cruise of the Challenger. It could guarantee publication within four weeks after having received the article, but would need to receive the report within two weeks of docking; thus any such article would have to be written on board ship. Nature would publish a report focusing on the "creative science" stemming from the cruise; it would not want to simply publish drilling results. The Nature article could complement the Geotimes article and could also effectively serve as a news release. The report could not exceed 1500 words (± 6 manuscript pages) and normally two figures would be the maximum number accepted. The co-chief scientists would be responsible for preparation of the report (with the approval and/or co-authorship of the cruise participants).

The Planning Committee, while appreciating the many writing duties heaped upon the chief scientists -- especially toward the end of a cruise -- was attracted by the short turn-around time and greater public exposure the Nature article would offer.

Following some additional discussion, J. Kennett moved (seconded by J. Cann) that the Planning Committee ask the co-chief scientists for each cruise to prepare a short article highlighting the scientific news and discoveries of the mission for publication in Nature. The Planning Committee makes the recommendation with the understanding that the article would be a regular feature of Nature.

Vote: 8 for, 0 against, 1 abstain. The motion passed.

The PCOM understands that the responsibility for writing the Nature article rests with the cruise co-chief scientists (not the DSDP staff representative). DSDP will assist with certain mechanical aspects of its production; e.g., typing, preparation of the artwork, transmittal as the article to Nature.

ACTION/ Lancelot

The PCOM asked Y. Lancelot to instruct the co-chief scientists of upcoming legs, beginning with Leg 83 to prepare a Nature article as described above.

N.B./ Cann

J. Cann will relay the PCOM's positive response to the editors of Nature.

2. Geotimes and GSA

Geotimes resumed publication of the DSDP article with Leg 76. The article comprises either one or two pages of text, highlighting the major results of the cruise and normally contains a stratigraphic section and small site location map.

DSDP continues to submit a more comprehensive article to the GSA Bulletin which appears later than Geotimes. DSDP now has an agreement with GSA for GSA to publish DSDP results every two months. GSA, however, has recently assessed a $100 per page charge on a voluntary basis, and DSDP may also want to look for alternative to the GSA article.

349 JOIDES COMMITTEE AND PANEL REPORTS

I. EXECUTIVE COMMITTEE

During E. Winterer's report on results of Executive committee meeting (Hannover 12, 14 August 1981) he noted that the Executive Committee,

- accepted all the Planning Committee's nominations to JOIDES Panels.
- took up the matter of "ownership" and use of DSDP drilled holes. J. Knauss will propose a discussion paper on the subject for the next (March 1981) EXCOM meeting.

- considers that a cooperative program involving the Seabed Disposal group involves policy decisions. The Executive Commitee will discuss the matter more at its next (December 1981) meeting.

- accepted the PCOM's recommendation that the organization and coordination of the microfossil reference centers be handled by William Riedel and John Saunders as outlined in the Saunders/Riedel memo of 5 May 1981.

- resolved that unless the DARPA group produced adequate data to define a site in the northwest Pacific, the DARPA work would be deferred until the next phase of the DSDP program.

- accepted the restoration of the Pacific paleoenvironment leg (sites NW-2 and -8) as fulfillment of its directive to restore a leg in the northwest Pacific. (The PCOM had earlier dropped the leg to ensure that higher priority science would be accomplished.)

- was sympathetic to the U.K.'s particular interest in problems relevant to the northeastern Atlantic continental margins. It asked the Planning Committee to adjust the 1983 northeast Atlantic leg to include drilling relevant to the problems of that area. The notheast Atlantic leg can be planned, for example, to include study of drift and fan deposits, dipping reflectors, etc.

- accepted the outline of the 5-year Challenger proposal in principle.

- established a subcommittee to encourage and develop guidelines for dealing with potential new members. (The committee comprising Art Maxwell, Allen Shinn, Jacques Debyser, and Hans Durbaum will probably meet just before the next (December 1981) Executive Committee meeting.)

Winterer also reported that through conversations with Jørn Thiede (University of Oslo) he learned that the Norwegian geologists and geophysicits were enthusiastic about possible JOIDES membership and that monies were available "in principle" through revenues from offshore petroleum exploration.

Roger Larson also reported to the Executive committee on the upcoming Conference On Scientific Ocean Drilling (COSOD). Larson has advertised the meeting widely and is expecting a good turn-out for the meeting. The results of COSOD will greatly influence future planning.

A. Shinn reported on the NSF plan to delay conversion of Explorer to handle a riser and blowout prevention system for three years and develop a plan for joint use of the vessel (OMD and JOIDES). The IPOD member countries reported that they continued to support the JOIDES program and were interested in pursuing a joint plan, but many problems would require solutions. A particular concern was the non-U.S. exclusion from the technology developed in conjunction with the deep-water riser and blow-out-prevention systems. (The oil companies later rejected the NSF plan.)

In addition, Winterer reported that the Executive Committee recognizes

one scientific community and asked the PCOM to create a 6-man subcommittee to work with the OMD Scientific Advisory Committee to develop a unified scientific plan. (Members of the PCOM and OMD/SAC subcommittee would also attend each other's meetings.) Winterer subsequently formed the subcommittee comprising J. Cann, J. Honnorez, J. Kennett, J. Aubouin, J. Creager and E. Winterer. Four subcommittee members attended the SAC meeting in Boulder (23-25 September 1981) — although two of them were attending as representatives of both the Planning and Scientific Activities Committees.

The EXCOM suggested that the Joint committee meet in December 1982 or January 1983, following completion of the Conference on Scientific Ocean Drilling.

II. POLLUTION PREVENTION AND SAFETY PENAL

E. Winterer reported on the Safety Panel meeting held 5 November 1981.

A. Leg 84

The Panel's main item of business was review of the Leg 84 sites. R. von Huene presented excellent reprocessed multichannel seismic records of region along the Guatemalan margin. The records clearly show bottom-simulating reflectors (BSRs) presumed to mark the base of the clathrate zones. In some cases where the BSRs cannot be detected on the records they are visible in the records of adjacent areas. (Von Huene also demonstrated that the potential base of a BSR can be accurately calculated for areas in which no evidence of a BSR appears on the records. The calculations are made on the basis that (a) hydrates occur in the slope deposits under more than 600 meters of sediment, and (b) their level is depressed by increased temperature and heat flow. Thus the level of a BSR may be projected on the basis of local heat-flow gradients.

The Safety Panel discussed the clathrate problem -- that of the clathrates potentially forming a seal below which hydrocarbon could have accumulated and thereby pose hazardous drilling conditions -- at length. On the basis of the excellent records and new information allowing better lateral projection to the BSRs, the Panel moved away from an earlier very conservative position regarding drilling in a hydrated zone. The PPSP, in addition to reviewing specific sites, developed general policies regarding the Leg 84 drilling. It approved

- drilling to 100 meters above the base of bottom-simulating reflectors observed on the seismic profiler records, or to 100 meters above the base of the BSR as estimated on the basis of the local geothermal gradient or measured in the hole while drilling. (Downhole logging is essential during Leg 84.)

- drilling sites within a defined region thereby allowing the shipboard party flexibility in site selection during the cruise.

The Safety Panel, recognizing the need to learn more about the hydrates and drilling into hydrates, approved a site (GUA-8a) to specifically sample the hydrate zone (above its base).

The Panel also discussed drilling through the base of a hydrate zone under certain circumstances (e.g., if dipping beds traceable through a BSR are sampled above the BSR and are shown to be impermeable and thus not a reservoir for hydrocarbons). The Safety Panel, however, was not prepared to see that attempted at this time, but will build upon the information gathered during Leg 84.

(The SIO Safety Panel met immediately after the JOIDES Safety Panel meeting and concurred on all PPSP recommendations.)

B. Leg 83

The Safety Panel approved the Leg 83 contingency sites (CRR-1A, -B, C, and -D), as proposed.

C. DARPA

The Safety Panel approved the region of proposed DARPA drilling, noting that the thin sedimentary cover over oceanic basement posed no safety hazard there.

D. Next Meeting

The Safety Panel will next meet sometime during February[1] to review the Leg 85 sites and Japan Trench (Leg 87) sites. Certain HPC sites can be reviewed by mail (owing to the limited penetration of the HPC).

E. Leg 77 Safety Concerns

During discussion, PCOM members commented that the letter (of July 31, 1981, from L. Garrison to E. Winterer, Appendix 1), concerning possible safety violations during Leg 77 was seen to be a fair summary of the problem taking into consideration the views of the scientific party.

Y. Lancelot noted that he is now distributing a rewritten set of guidelines to cruise chief scientists as an interim step, while the Sedimentary Petrology and Physical Properties Panel is revising the shipboard safety manual.

III. COMMITTEE, PANEL, AND WORKING GROUP MEMBERSHIP

A. Additional Paleomagnetists on JOIDES Panels

In a letter (of 31 July 1981), Chris Harrison urged the Planning Committee to increase the representation of paleomagnetists on JOIDES panels.

The Planning Committee agreed that there was a continuing interest in both the technical aspects of paleomagnetic studies and magnetic stratigraphy. Kennett noted that a person familiar with the origin and nature of magnetic orientation in rocks would be a particularly valuable addition. The PCOM agrees that paleomagnetists are probably under-represented in the

[1]Subsequently postponed to March.

ACTION/ Winterer

N.B./ Panel Chairmen

JOIDES planning structure. E. Winterer will ask panel chairmen to review their membership with an eye toward balance among the various disciplines. Paleomagnetists might best fit on the Ocean Paleoenvironment, Stratigraphic Correlations, or Sedimentary Petrology panels.

B. Changes in JOIDES Panel and Committee Membership

1. The Executive Committee

Anthony Laughton has replaced Peter Twinn as alternate to Peter Kent for the United Kingdom.

2. Planning Committee

Jose Honnorez will replace Wolfgang Schlager as the University of Miami's PCOM representative beginning in February 1982. W. Schlager will replace J. Honnorez as alternate.

James Kennett has replaced Ted Moore as University of Rhode Island's representative to the Planning Committee. (Moore has left URI to take a position with Exxon in Houston.)

3. Passive Margin Panel

David Roberts has taken a position with British Petroleum, but will continue to chair the Passive Margin Panel. British Petroleum encourages his participation and Roberts sees no problems with securing the time necessary to carry on his duties as panel chairman (per telephone conversation between Roberts and Winterer).

4. Ocean Paleoenvironment Panel

The OPP currently has two vacancies: one as a result of Kennett's moving to the PCOM and one owing to W. Ruddiman's resignation.

Acting upon a suggestion made by R. Douglas and relayed to the PCOM, J. Cann moved (seconded by W. Bryant) that Ted Moore be invited to join the Ocean Paleoenvironment Panel.

Vote: 12 for, 0 against, 0 abstain. The motion passed unanimously.

The second OPP slot remains open.

Robert Kidd (Instuitute of Oceanographic Sciences) will replace Hugh Jenkyns on the Ocean Paleoenvironment Panel (representing the United Kingdom).

5. Inorganic Geochemistry Panel

Michel Hoffert (Universite Louis Pasteur, Strasbourg, France) will replace Yves Tardy on the Inorganic Geochemistry Panel.

6. Organic Geochemistry Panel

Simon Brassel will replace Geoffrey Eglinton on the Organic Geochemistry Panel (representing the United Kingdom).

Site-Survey Panel

Vincent Renard (C.O.B., Brest) is the French member of the Site-Survey Panel. (Earlier JOIDES Journal have listed Roland Schlich as the French representative.)

7. Hydrogeology Working Group

L. Montadert suggested that Foucher (C.O.B., Brest) be added to the Hydrogeology Working Group. The Planning Committee saw no objection to this.

8. Hydraulic Piston Coring Working Group

The PCOM agreed that the HPC Working Group had performed its mission -- that of providing guidance for the development of the hydraulic piston coring system and its use in solving scientific problems.

Following discussion, R. Moberly moved (seconded by J. Cann) that the Hydraulic Piston Coring Working Group be disbanded.

Vote: 12 for, 0 against, 0 abstain. The motion passed unanimously.

The PCOM thanked the HPC Working Group and Ted Moore for the excellent job it had done.

P. Worstell urged panel chairmen and the PCOM liaison people to keep the Planning Committee and JOIDES Office informed of changes of membership or dissolution of working groups. (Most Working Groups are "children" of panels and thus the PCOM does not act directly in determining membership.)

C. Planning Committee Liaison to Panels

Jim Kennett agreed to serve as Planning Committee liaison to the Ocean Paleoenvironment Panel replacing Ted Moore.

ACTION/ Winterer

With Moore's departure from the Planning Committee, the Information Handling Panel has no PCOM liaison. E. Winterer will ask Joe Creager (not present at the meeting) if he would serve in that capacity.

350 PLANNED CHALLENGER DRILLING

I. DARPA SITE SELECTION

A. Background

Alan Ballard (NORDA) and Bob Hart (Sierra Geophysics) reported on the status of site selection for the DARPA seismic experiment.

1. History

In the spring of 1979 DARPA received funds to develop and investigate deployment of a marine seismic system in the ocean floor. The package contains instruments to measure broadband seismic signals, long-term temperature changes, crustal tilt, and hydroacoustic signals. The planners approached NSF and the JOIDES Planning Committee during the spring of 1980 concerning the possibility of deploying the system during the 1982-83 proogram. At their July meeting the JOIDES Planning Committee expressed a "high regard for the scientific merits of the system" and "considered favorably its proposed deployment in the northwest Pacific." It also approved testing the system in Hole 395A. The PCOM understood that that all data would be available to the scientific community and that the northwest drilling would be organized in such a way as to implant the DARPA marine seismic system and address other scientific objectives in the area. (See PCOM Item 305, July 1980 minutes.)

Al Ballard briefed the PCOM on the very successful deployment and oblique seismic experiments conducted during Leg 78B.

DARPA will be prepared to deploy the system in the northwest Pacific during the summer of 1982. The PCOM has asked that the area be adequately surveyed and the site located to ensure best scientific results.

2. Criteria

In response to the Planning Committee's request for a specific location for the seismic experiment, DARPA has suggested the site be loocated at 45°41'N, 162°08'E. A. Ballard listed the physical criteria DARPA considered for site selection. In order to collect suitable data, and ensure the drilling is technically possible, the site should be located

- out of the seismic shadow zone for events in the region of the Japan Trench.
- in a region of smooth topography to set the drill string.
- in water as shallow as possible in an area with reasonably thin sediment cover to minimize drilling problems.
- north of 45° north in areas where chert beds are thin.
- away from the two major current systems in the area to minimize problems of maintaining position over the hole.
- away from any fracture zones.
- away from fishing areas.

3. Discussion

The PCOM reiterated its interest in the experiments noting that they had great scientific potential.

Discussion centered about how much flexibility DARPA had in locating the site. Members noted that the DARPA site was only 13 miles from a known seismic line. Moreover, drilling a hole 100 miles north could well satisfy one of the Ocean Paleoenvironment objectives -- that of sampling sediments deposited by ancient current regimes.

R. Hart expanded upon the reasons for selecting that point noting that it was selected on the basis of statistical analyses of numerous factors. He had viewed hundreds of maps and pin-pointed the site by plotting more and less acceptable areas for each criterion on a set of map overlays. He noted, however, that placing the site 13 miles north may well be equally acceptable.

The PCOM consensus was that the hole for the DARPA marine seismic system be drilled on a known (available) seismic line. It also asked DARPA to establish its range of flexibility regarding site selection and take any proposed sites to the Ocean Paleoenvironment Panel (which meets 30 November-1 December 1981). The PCOM asks the OPP and DARPA to select a site maximizing the potential realizing both OPP and DARPA scientific objectives.

II. UPCOMING LEGS

A. Leg 83 (Costa Rica Rift)

Y. Lancelot relayed some problems regarding Leg 83.

Problem. Leg 83 comprises two parts: deepening Hole 504B as much as possible and conducting a series of seismic and downhole experiments. Planned experiments include logging, packer experiment, oblique multichannel seismic experiment, resistivity, and borehole televiewer experiments.

Conrad was to have met Challenger at sea on 31 December 1981 bringing experimenters and equipment for the downhole experiments. In addition, Conrad and Challenger were to have conducted an oblique seismic experiment. Conrad, however, is undergoing a "mid-life overhaul" and despite earlier plans will not be out of the shipyard until the end of January -- too late to support the Leg 83 work.

Consequently, DSDP/JOIDES was forced to develop alternative Leg 83 plans and considered several alternatives as follows.

a. Do the downhole experimental work immediately after Leg 84. This, however, would add considerable steaming time to Challenger's schedule, cutting into time available for later legs.

b. Do the experimental work a year later -- immediate after the hydrogeology leg. Some experimenters, however, would no longer be funded at that time and a year's delay would considerably set back programs allready well underway.

c. Make special trip with Challenger to Balboa to pick up experimenters and equipment. This, however, would use on-site time for non-scientific purposes, i.e., use Challenger as a ferryboat.

d. Get as much experimental gear as possible on board Challenger at the beginning of Leg 83 (Balboa). Then charter a boat to rendezvous with Challenger later bringing additional gear, and serve as shooting ship for the seismic experiment.

DSDP opted for the last alternative, instructing experimenters to have their gear ready on the dock at Balboa. Some experimentors, however, cannot join Challenger on the earlier date and will need to instruct members of the shipboard party on the use of their equipment.

At the time of the PCOM meeting most experimental equipment was ready, and NSF was attempting to locate a "shooting ship" for the oblique seismic experiment.[1]

Leg 83 plan After arriving on site the shipboard party will (1) re-enter Hole 504B, (b) measure heat flow, sample pore water, and assess water flow, (c) deepen Hole 504B as far as possible. (Seven bit-runs are considered feasible within the time available for drilling to deepen the hole through multiple re-entry operations. Proponents hope the hole may be extended by 650 to 700 meters, possibly sampling transition between layer 2 and even penetrate into the upper part of layer 3.

(d) pull the drill string to the mud-line, drop the bit and conduct special downhole experiments.

(e) conduct oblique multichannel experiment (if a support ship found).

Staffing Lancelot noted that he necessarily staffed the ship to cover the prime objective of the cruise -- deepening Hole 504B and run downhole experiments. Holding a standby crew of sedimentologists to support the contingency plan (drilling several shallow holes in a grid within the area should problems arise in drilling Hole 504B) was impossible, particularly over the holiday season.

Co-chief scientists for Leg 83 are Roger Anderson and Jose Honnorez.

Natland Report

In conjunction with the discussion E. Winterer alerted the PCOM to a report J. Natland had prepared concerning reasons for terminating drilling into hard rock in the past years. The survey (Appendix 2) demonstrated that many deep holes into oceanic crust were not terminated for reasons related to the nature of the crustal rocks but owing to logistical and technical reasons. Holes are most often abandoned because of time constraints -- the ship has to return to port, and particularly owing to operational incidents not directly related to the nature of the formation.

J. Honnorez noted he had made a similar study with similar results and

[1]Later during the PCOM meeting, Y. Lancelot reported that DSDP and NSF were unable to locate a vessel for the oblique seismic experiment. That experiment will not be conducted during Leg 83.

sees no reason why Challenger could not deepen many of the previously drilled holes with good results.

B. Leg 84 (Middle America Trench)

Objectives Leg 84 will return to an area offshore Guatemala to complete the program originally planned for Leg 67. The bit will sample the subduction complex beneath a mantle of slope sediments. Proponents hope to better understand the dynamics of accretion and to develop the multistage geologic history along this convergent margin. The margin may have been formed by many different styles of tectonic processes acting at different times, and presents a complex scientific puzzle.

On the basis of data recently made available the proponents have added another site offshore from Costa Rica and have dropped plans to drill a site offshore Oaxaca.

Planned Drilling An ad hoc group of the Active Margin Panel met at Scripps following safety review of that leg. Sites recommended by the group are contained in a memo (of 9 November 1981) addressed to E. Winterer (Appendix 3). In addition to the sites proposed to study the margin's tectonic history, proponents plan to sample and date the slope deposits (CRR-1C) and select a site specifically to study gas hydrates (Guatemala transect 8A).

The Leg 67 party found shallow-water foraminifers in the slope deposits giving evidence for Neogene subsidence.

Site Survey R. von Huene secured excellent re-processed records which enabled the proponents to more accurately select sites. The French have made SEABEAM data available and Lancelot noted that an additional SEABEAM survey might be possible in the future.

Safety Panel Review Details of the Safety Panel review are contained under Item 349-II, above. In summary, owing to the excellent seismic and geothermal data now available (on the basis of which proponents can predict the base of the bottom-simulating reflector), safety restrictions are less rigorous than those for Leg 67. The Safety Panel also allowed definition of a region within which it approved drilling. This will allow the shipboard party to alter location of some sites without prior approval from shore, and the difficulties in communication and loss of ship's time that creates. The shipboard party, however, must notify DSDP of location as soon as the ship is on station.

Logging All interested parties agree that logging on Leg 84 is essential. (Problems surrounding funding for logging are discussed under Item 350-III, below.)

Co-chief scientists for Leg 84 are Jean Aubouin and Roland von Huene.

C. Leg 85 (Equatorial Pacific)

Proponents have planned Leg 85 drill and hydraulic piston core six to eight sites on an area bounded by 0.5°N, 10°N latitude and 115°W and 138°W

longitude. The very detailed stratigraphc record recovered in this area of rapid deposition will allow scientists to refine patterns of neogene climatic oscillations, carbonate dissolution, and biostratigraphy.

All sites are located on existing lines. SIO will conduct an additional site survey during January of 1982. It expects good results with its improved system which will include water guns and a dual-channel digital recorder. The very short time between the SIO survey and the beginning of Leg 85, however, will require speedy data reduction, processing, and final site selection.

The Ocean Paleoenvironment Panel will meet at the end of November (1981) meeting to refine the Leg 85 objectives and drilling strategies.

III. LOGGING - PACIFIC LEGS

A. Background and Discussion

DSDP has proposed to limit logging on the FY 1982 Pacific legs to meet NSF's $1.2 million budget reduction mandated by NSF for FY 1982.

Members of the Planning Committee expressed grave concern about reduction in the logging which it views as an integral part of shipboard scientific program. Members noted that the PCOM has been on record over a period of years of strongly supporting logging. Members hope that the non-U.S. governments would not construe the budget cuts as a lack of commitment within NSF to the program.

In addressing the problem the PCOM discussed logging on a leg-by-leg basis. It noted that the Middle America Trench (Leg 84) must be logged to ensure safety of the drilling operations and realization of the Leg 84 main scientific objectives. Logging is somewhat lower priority on Equatorial Pacific Leg (85), but temperature measurements must be done. Logging is lower priority on the NW Pacific paleoenvironment leg (86), but is essential in the Japan Trench (Leg 87) to realize the scientific objectives there. Although DARPA has not shown a great interest in logging the north Pacific site of the marine seismic experiment, the PCOM felt that logging here would greatly enhance understanding the geology of the region and complement the DARPA experiments.

B. Resolution

Following additional and extensive discussion, J. Cann moved (seconded by J. Corliss) that the Planning Committee accept the following resolution:

> The Planning Committee views with alarm the difficulties in obtaining funding for logging during FY 1982. It reaffirms its scientific advice that logging of holes should be a normal continuing operation except as agreed specifically upon on an ad hoc basis, and advises that of the planned legs during FY 1982 only Leg 86 (NW Pacific Paleoenvironments) fully meets its criteria that logging may be omitted, while Leg 85 (equatorial Pacific) approaches those criteria nearly. Logging on Legs 83, 84,

and 87 is essential for completing the scientific objectives of those legs.

Vote: 11 for, 0 against, 0 abstain. The motion passed unanimously.

ACTION/ Winterer

Possible other sources for funds to conduct the logging include the U.S. Geological Survey and JOI. E. Winterer will contact T. Edgar and A. Shinn to discuss the possibilities of U.S.G.S. supporting logging especially in conjunction with the hydrate studies (Leg 84) which closely ties in the survey's interests.

IV. CO-CHIEF SCIENTISTS

A. Planning Committee Concern

The Planning Committee expresed concern over the lateness with which cruise co-chief scientists (and scientific parties) are being named. Late designation of co-chief scientists can impair the scientific mission of the cruise. Early designation of at least one co-chief scientist would expedite development of, and result in, more balanced scientific parties. In addition, many people plan their schedule many months in advance; teaching faculty particularly have to make special arrangements to participate. Many excellent candidates cannot participate in a cruise unless invited many months in advance.

The PCOM, thus attempted to recommend at least one potential chief scientist for each cruise through the Pacific part of the program (through Leg 91). The Committee acted on advice received to date from subject panels, but also urges panel chairmen in the future to take the long view toward cruise staffing.

B. Leg 85 (Equatorial Pacific Paleoenvironments)

Leg 85 is scheduled to begin 1 March 1982 in Honolulu. None of the potential co-chief scientists candidates invited by DSDP per the PCOM's recommendation (July 1981 meeting), was able to serve.

On the basis of recommendations submitted by the OPP Chairman and following discussion, the PCOM recommended that DSDP consider the following people: John Jones, James Hays, Larry Mayer, Margaret Leinen, and Graham Jenkins. Other possible candidates include Fritz Theyer, Tj. van Andel and William Riedel. (The PCOM noted that Margaret Leinen was a top candidate for the hydrogeology leg (Leg 91) and that Graham Jenkins was also a potential candidate for a later leg. (The PCOM had previously hoped that Bob Douglas could serve as co-chief scientist, but Douglas is unable to do so.)

C. Leg 86 (Northwest Pacific Paleoenvironment)

The PCOM recommended that Ross Heath be invited to serve as one co-chief scientist on Leg 86. It will await other recommendations from the Ocean Paleoenvironment Panel, but suggests that perhaps a biostratigrapher would best complement Heath. Possibilities are Itaru Koizumi, James Hays, Fritz Theyer, and Connie Sancetta (who volunteered to serve in a letter to E. Winterer), and George de Vries Klein. The Soviets will also have a

strong interest in the leg and may want to suggest a candidate.

ACTION/ Winterer

E. Winterer will ask the Ocean Paleoenvironment panel to recommend the names of other potential co-chief scientists for Leg 86; those candidates suggested for Leg 86 would also be appropriate for Leg 88.

D. Leg 87 (Japan Trench)

The PCOM recommends that Hideo Kagami be invited to serve as co-chief scientist on Leg 87 (with the understanding that he would serve throughout the entire leg).

The PCOM asks the Active Margin Panel chairman to consult with its panel by mail and make a recommendation for the second Leg 87 co-chief scientist. Possible candidates include Dan Karig, Marc Langseth, Don Hussong, Mike Arthur, and George deVries Klein.

E. Leg 88 (DARPA Seismic System Implantation, Northwest Pacific)

The PCOM recommended Fred Duennebier be invited to serve as co-chief scientist during Leg 88.

The DARPA group does not require a co-chief from its ranks and is satisfied with the seleletion of Duennebier (per Y. Lancelot and earlier discussion during the meeting).

F. Leg 89 ("Old Pacific" environments)

The PCOM accepted any of several candidates proposed which fell into two groups: regional geologists and igneous petrogists

A	B
Yves Lancelot	Rodey Batiza
Roger Larson	John Sinton
Ralph Moberly	
Sy Schlanger	

Members of the PCOM felt that candidates in Group A were more all well qualified by extensive experience but made no specific recommendations.

G. Leg 90 (Southwest Pacific Paleoenvironments)

The Planning Committee recommended that James Kennett be invited to serve as co-chief scientist on Leg 90. It will await other suggestions from the Ocean Paleoenvironment Panel for the second co-chief scientist, but noted that a geophysicist might provide a suitable balance.

Graham Jenkins is another potential candidate.

Lawrence Frakes (Australian guest) commented that the Australians have considerable interest in the area and that participation of Chris von der Borsch, John Keene, or Larry Frakes might help encourage Australian participation in JOIDES.

PCOM members also suggested Nick Pisias and Michael Sarnthein as potential participants.

H. Leg 91 (30° South Pacific - Hydrogeology)

The Planning Committee recommended that Margaret Leinen (URI) be invited to serve as co-chief scientist on Leg 91.

ACTION/ Winterer

E. Winterer will solicit names from the Ocean Crust, Inorganic Geochemistry, and Downhole Measurements panels for additional suggested co-chief scientists. Possibilities include Clyde Lester (Uniersity of Washington), Jean Francheteau (C.O.B.), and Harry Elderfield (University of Leeds).

N.B./ OCP, IGP, DMP

I. Leg 92 (Mississippi Cone)

The Planning Committee recommended that Arnold Bouma be invited to serve as co-chief scientist on Leg 92.

The appropriate PCOM liaison will solicit names of additional nominees from the Sedimentary Petrology and Passtive Margin panels.

J. Leg 93 (Atlantic - ENA-3)

ACTION/ Bryant

The PCOM made no specific recommendations for Leg 93, but noted that John Ewing, Brian Tucholke, and John Grow would be excellent co-chief scientists on that leg. W. Bryant will ask the Passive Margin Panel to suggest candidates at next meeting.

K. Leg 94 (Northeast Atlantic Paleoenvironments)

The PCOM recommended that William Ruddiman (L-DGO) be invited to serve as co-chief scientist during Leg 94.

The PCOM liaisons to the Ocean Paleoenvironment and Sedimentary Petrology panels will solicit names of other nominees from their respective panels. Possibilities include Nick McCave and John Jones.

L. Additional Discussion

During discussion E. Winterer reiterated the ground rules for selection of the co-chief scientists and scientific parties. At least one co-chief scientist must be employed by a U.S. institution; at least one co-chief scientist must have sailed on Challenger previously and at least 50 per cent of the scientific party must be employed at a U.S. institution.

Members emphasized that co-chief scientists should be invited at least a year in advance of the cruise and that the PCOM and DSDP, in selecting co-chief scientists, should take a candidate's flexibility and dedication to the cruise into account.

Some members suggested that a relaxation of agreements pertaining to cruise staffing would allow DSDP create better balanced scientific parties. These condititions, however, are agreed to by memoranda of understanding

between participating governments and are not easily changed.

ACTION/ Lancelot

Y. Lancelot agreed to contact the co-chief scientist nominees immediately following the PCOM meeting.

V. DRILLING SCHEDULE

A. Shift Involving Legs 86, 87, and 88

The previous Challenger schedule (of 10 June 1981) showed the sequence of drilling as Leg 86 - DARPA Seismic experiment, Leg 87 - northwest Pacific paleoenvironments, and Leg 88 - Japan Trench. To better utilize time and staff, DSDP now recommends that the sequence be: Leg 86 - northwest Pacific, Leg 87 - Japan Trench, Leg 88 - DARPA seismic experiment, and that the offshore Japan leg be divided into two mini-legs: (a) Japan Trench and (b) Nankai Trough. DSDP had also explored the option of Challenger going into Majuro for the Leg 85-86 port call to avoid the U.S. and ad valorem[1] tax of about $250,000. The facilities at Majuro, however, are not adequate to fulfill the Challenger's annual drydock requirements. Additional steaming costs would also amount to about $180 thousand. (DSDP is attempting to get a waiver of the ad valorem[1] tax, but the legal ramifications are complex and resolution may be years away.) DSDP has opted to use Honolulu as the Leg 85/86 port.

Lancelot also noted that the DARPA experiment cannot be delayed too much later in the season. Because the DARPA hole requires a long drill string and drilling will be in an area of surface currents, conditions already approach the upper limit of stress which the drill string can tolerate; hence weather conditions must be optimum. He also noted that the creation of two mini-legs off Japan would only require about 24 hours to change shipboard parties.

The Planning Committee agreed to DSDP's proposed schedule change for Legs 86, 87, and 88. (See also Table 1.)

B. Forward Planning (Legs 89-95)

The PCOM vigorously discussed planning for the remainder of the 1982-83 program. Because insufficient time remains to address all the excellent scientific objectives designated as highest priority at its recent meetings, the PCOM must make difficult decisions. In attempting to set the remainder of the 1982-1983 schedule, it first estalished four legs absolutely critical to the program (two in the Pacific and two in the Atlantic), and then established a minimum number of on-site days required to accomplish the objectives of these four "cornerstone" (and other technically inflexible) legs.

The drilling schedule is further constrained by weather, logistical and political factors. The southwest Pacific (Leg 90) must be drilled in

[1]The ad valorem assess 50 per cent of costs for repair completed on a U.S. ship at a non U.S. port, upon return of that ship to a U.S. port.

Table 1

Leg	Begin	End	Steaming/Port Time	On-Site Time	Total Time	Objective
86	Honolulu	Hakodate	24	32		NW Pacific Paleoenvironments
87	Hakodate	Hakodate		47		Japan Trench
88	Hakodate	Yokohama		[29]		DARPA
89	Yokohama	Rabaul	19	10 & 4		Old Pacific
90	Rabaul	Wellington - 8 Jan 83 Papeete - 19 Jan 83	16	32	60	So. Pacific
91	Papeete	Balboa	27	30	57	Hydrogeology
92	Balboa	Ft. Lauderdale	12	44	52	Mississippi Cone
93	Ft. Lauderdale	Azores	17	39	56	NEA-3
94	Azores	Reykjavik	22	34	56	NE Atlantic Paleoenvironments
95	Reykjavik	End Port - 23 Oct 83			51	Northwest Africa or New Jersey Transect or Caribbean

the Austral summer (December-February); the northwest Atlantic must be drilled in the boreal summer. Agreement between DSDP and Global Marine calls for a 56-day cruise cycle and Challenger should return to the Atlantic on 1 April 1983 to protect the Atlantic program. Political considerations, i.e., gaining permission to drill the Mississippi Cone or offshore New Jersey could possibly impose further constraints. Working from these fixed points, the PCOM attempted to develop a fair and technically feasible schedule.

Highest Priority Legs -- The PCOM recognized (a) southwest Pacific paleoenvironment, (b) hydrogeology, (c) western north Atlantic ENA-3 and (d) northeast Atlantic paleoenvironment legs as key legs which must be conducted without compromising their scientific programs.

Viewing priorities and constraints, the PCOM fixed the southwest Pacific Leg 90, as beginning in late November, placed the northeast Atlantic leg in July-August 1983 and scheduled the Challenger into port at the end of the 1981-83 phase on 23 October 1983. The final leg (95) would address objectives of the northwest African coast, New Jersey or in the Caribbean.

Many PCOM members also agreed that the northwest Pacific leg was, on the basis of scientific potential, lower priority than the others on the schedule. If its driling were not mandated by political considerations, it might be eliminated from this phase of the program.

R. Moberly objected to the cutting of two of the three prime sites from the OPP-proposed Old Pacific leg (89), and insertion of a southwest Pacific hydraulic piston core site. In order to retain the cohesion and objectives of that leg, he recommended the sites be restored at the expense of work in the northwest Pacific or Atlantic that the PCOM had earlir judged to be of lower priority.

The PCOM was not of a single mind with regard to ways to ensure the highest priority science was accomplished. Some members favored eliminating a leg entirely to ensure time to complete objectives on other legs. With the exception of the northwest Pacific leg, which members considered lower priority, members could not agree on what other objectives might be sacrificed. J. Cann noted that the people tended to regard the last leg on the schedule as disposable -- the leg which would absorb delays throughout the rest of the schedule. He stressed, however, that the final leg, be it northwest Africa, Caribbean drilling, or the New Jersey transect, addressed scientific priorities equal to, or higher than, other legs and as a matter of principle should not be viewed as a "throw-away" leg. The PCOM should make reasonable choices, not simply allow delays to be passed through to the last leg.

ACTION/ Lancelot/ Winterer

The Planning Committee developed the sequence of drilling shown on Table 1 which embodies its prime objectives. The table, however, does not contain the beginning and ending dates of cruises. The PCOM discovered an error in calculation which may add several days to the schedule, however, shortly before it adjourned. It asked Y. Lancelot and E. Winterer to complete the schedule, following PCOM guidelines discussed above and constrained as follows:

- Leg 95 would comprise either (a) northwest Africa, (b) New Jersey Transect, or (c) Caribbean drilling -- in no order of priority.
- Maintain 51 operating days for the southwest Pacific Leg (90).
- Maintain 29 operating days for the old Pacific leg (89).
- If insufficient time is available, the drilling time for the northwest Pacific leg (86) and/or Mississippi Cone (Leg 92) can be reduced by 7 and 4 days, respectively.

VI. SITE-SURVEY PLANS

Site survey planning and operations are at last keeping abreast of scientific planning and ship's operations.

The major problem at present is ensuring an adequate survey of the Mississippi Fan (Leg 91, May 1982). LeRoy Dorman and John Jones are currently working to ensure that JOI will be able to issue a Request for Proposals very soon.

The status of other survey are:

Leg 85 (Equatorial Pacific) - The SIO survey is planned to begin the first week of January 1982.

Leg 89 (Old Pacific) - Hawaii has just completed the resulting survey and is processing the resulting data.

Leg 91 (Hydrogeology) - The survey conducted jointly by SIO and URI is planned for the spring of 1982 immediately following the Leg 85 survey.

Leg 90 (Southwest Pacific) - Considerable data are already available for the area and the existing data are considered sufficient. Although proponents considered additional survey desirable, no vessels are available in the area to conduct it.

With the exception of the Mississippi Fan, adequate data are available for the Atlantic legs.

Proponents may want to investigate the U.K. sources for data for the northeast Atlantic drilling.

351 LONG-TERM PLANNING

I. FIVE-YEAR PROPOSAL

A. Science Narrative

E. Winterer distributed a rough draft of the scientific narrative of a five-year drilling proposal using Glomar Challenger. (Its outline is included as Appendix 4.) He noted the following guidelines, constraints and focus in development of the proposal.

- The concepts and scientific goals embodied in the proposal are from white papers submitted by the JOIDES panel chairmen. The panel chairmen developed their white papers in the context of a long-term program free of platform constraints. The proposal, however, per charge of the Planning and Executive committees, is written for Challenger drilling.

- Winterer followed the topical organization established for the Conference on Scientific Ocean Drilling. In many cases he used the original language of the white paper, writing new material only if items were implicit but not explicit. Some white papers, and topics in the proposal, need to be reworked, especially the passive margin part. Winterer also tried to bring the major topics into a reasonable sequence.

- The proposal is at present very long and the style somewhat uneven. Winterer had earlier planned to include all the white papers as an appendix, but notes this would create a massive document.

- A good summary is required. The proposal is much too long to be easily digested. Winterer will write a summary after receiving general comments and directives from the Planning Committee, and the PCOM Subcommittee following the conference on Scientific Ocean Drilling to be held soon after the PCOM meeting.

- The downhole measurements part remains intact as a separate section.

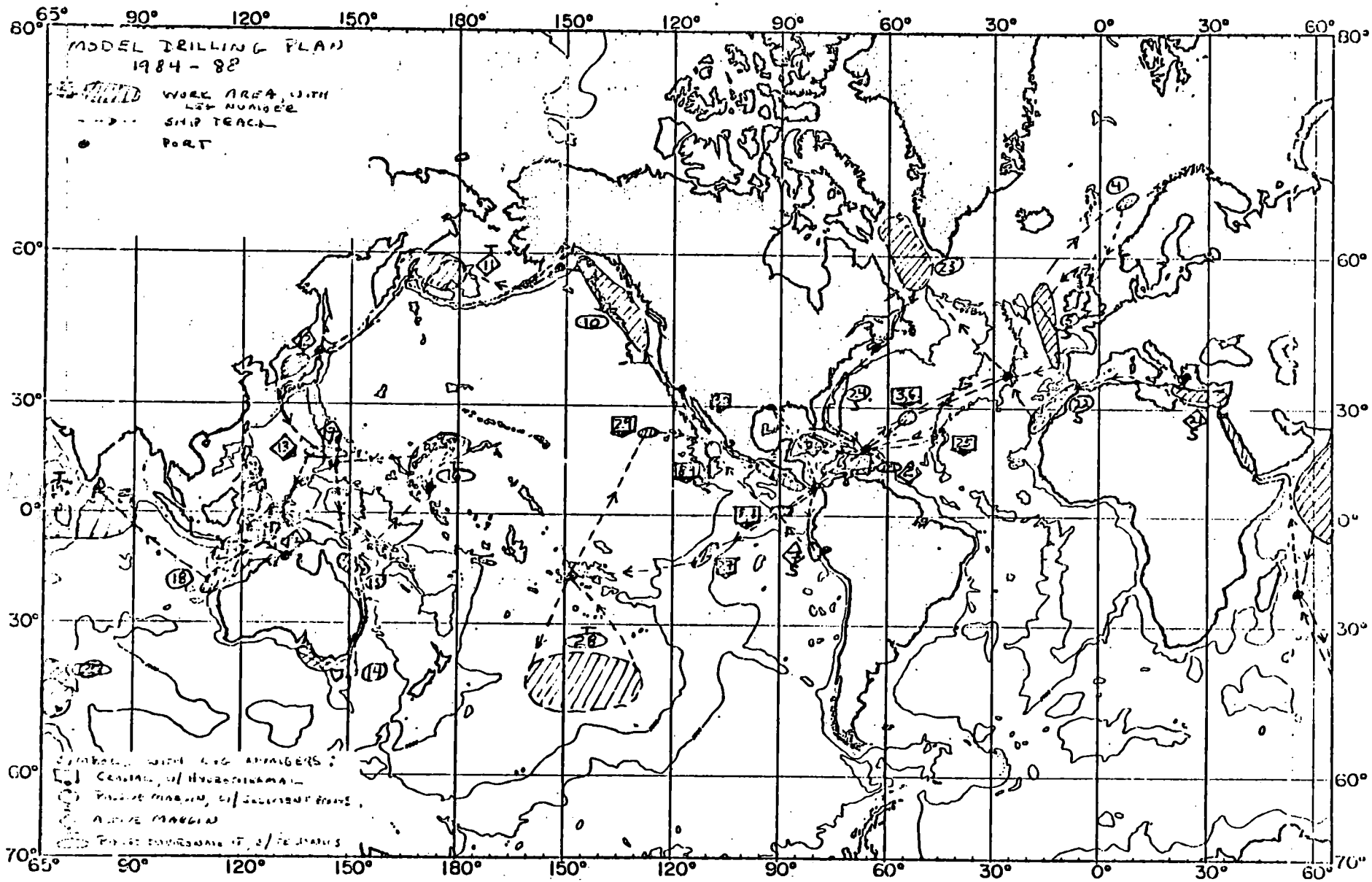
- The recommendations of all panels are embodied into a model drilling schedule (Fig. 1). Many different solutions are possible and this is only one of them. In developing the schedule, Winterer attempted to (a) route the ship back to previsouly drilled sites to build on preexisting science, deploy instruments and perhaps even retrieve instruments left in the hole, (b) cluster legs for efficient operations, and (c) consider seasonal constraints.

- The proposal as written does not route Challenger south of 50°S. The ship tracks from east to west, beginning in the Atlantic 1 January 1984 and presumes an 8-week cruise duration. The model schedule allows between 7.5 and 8.5 legs to address the objectives of each panel and provides a good general balance of subject matter. It includes a particular emphasis on solving problems of hydrothermal systems and very young crust.

- DSDP is concurrently developing plans and cost estimates for management and upgrading of Challenger. In addition, DSDP engineers have developed an extensive list of new or improved drilling systems and tools to complement the scientific program (discussed below). In its final form the proposal will integrate the science and management plans.

B. Deep Sea Drilling Planning

DSDP is currently developing its management plan and attending budgets.


MODEL DRILLING PLAN
1984 - 88
WORK AREA, WITH LEG NUMBER
SHIP TRACK
PORT
65°
90°
120°
150°
180°
150°
120°
90°
60°
30°
0°
30°
60°
80°
60°
30°
0°
30°
60°
70°

The DSDP engineering group has also given considerable thought to the tool development required by the proposed scientific objectives. Project engineers have been working independently, but in parallel with JOIDES planners to conceive new or improved systems and tools.

Y. Lancelot relayed a list of several systems currently being considered.

Coring Systems

- atmospheric-chamber piston corer - to increase penetration rate to core stiffer sediments with good recovery and little disturbance.
- extended core barrel - to recover interbedded soft and hard layers (presently being developed for the 1982-83 drilling).
- controlled-circulation corer - to control the amount of circulation at the cutting shoe of the extended core barrel. The controlled circulation would improve its cutting abillity while decreasing core disturbance.
- surface sensing corer - a modification of the extended core barrel to monitor conditions at the bottom of the hole thus allowing the driller to make appropriate adjustments (e.g., penetration rate, bit weight).
- vented core barrel - to vent fluids from the core barrel.
- large-diameter core barrel - piston corer to collect samples voluminous enough for geotechnical and engineering studies.
- hard-rock pressure core barrel - to collect samples from more indurated rocks without loss of pressure.
- asceptic core barrel - to collect and preserve organisms (bacteria) living in the sediment column or in hard rock for biological study.
- downhole performance instrument - to sense, and record data about the performance of the coring systems.
- advanced coring systems - to evaluate and respond to data collected by the downhole performance package. (Coring systems include operations involving latching, rotation, core-catcher failure, bit failure, circulation, down-hole drilling fluid pressures, and hole conditions.
- high-efficiency coring system - in which the wireline is attached to the core barrel throughout coring, thereby saving trip time to pump down the wire line.
- hard-rock core orientation.

Drilling Systems

- new bits including those (a) to improve or develop cutting shoes for use in very hard rock, (b) to provide "full-face" contact as an

alternative to roller-cone bits, and (c) small diameter bits for use in situations where the hole is cased to great depths (i.e., becomes narrower).

- computer analysis of drill string stresses.

- hard-rock spudding systems - to allow spudding of holes in areas with little or no sediment cover.

- slim-line riser system - to return circulated fluids and samples of drilled materials to the ship (the system would not include a blow-out preventor).

- concentric-pipe riser system - to return circulated fluids (in part) to the ship (no well-control system included).

- air-lift riser - to return cuttings (in part) and maintain good hole conditions.

- downhole drilling motor - to improve penetration at the end of long drill strings -- especially penetration into hard rocks and to improve spudding into hard rocks overlain with little or no sediment cover.

- geothermal drilling - to improve core bits and pressure-core-barrel seals, and other hardware to tolerate downhole temperatures in excess of 600°C. (Logging tools designed for use in high temperatures are available "off the shelf," but the need is to develop an "ambient drill string" to sample fluids without disturbing their in situ environments.)

Borehole Instruments

- seafloor provide system - to support a motion-free system on the seafloor from which to deploy downhole instrument packages.

- wireline re-entry - to deploy downhole instrument packages by wireline from oceanographic vessels. (DSDP is currently developing a wireline re-entry system for the 1982-83 program.)

- heat-flow sensor - to monitor heat flow in conjunction with the hydraulic-piston coring system. (Woods Hole has developed the prototype; DSDP is designing the mechanical system and housing and plans to test it during Leg 85.)

- low-flow-rate meter - to measure low rates of fluids flowing in bore holes.

The Project also is considering other advanced studies including determining in situ shear strengths, bit velocity at time of penetration, pull-out forces, wireline coring techniques, motion-compensated piston coring, and a core-barrel formation tester (to improve upon the packer system, and current-meter systems.)

II. DISCUSSION

The Planning Committee thanked E. Winterer for his efforts in developing a draft of the 5-year proposal. The PCOM accepted the basic document recognizing that although the withdrawal of support to the Ocean Margin Drilling Program could change the perspective of JOIDES planning, a long-term proposal must be submitted to NSF very soon to ensure continuation of scientific ocean drilling. PCOM members made several useful suggestions and comments. They suggested that

- the proposal be brought into better focus -- that it be linked into a single encompassing global framework. Newly emerging concepts need special focus to convince reviewers that this is a dynamic scientific program. (Winterer noted that he would wrap the overall scientific goals into a summary of the proposal.

- linking drilling to north of 50°S is a technical (very high insurance costs, possible need for hull modification), not a scientific problem. The southern ocean holds the key to solving global problems and many JOIDES objectives can be addressed there. The proposal (or a version of the proposal) should be expanded to incorporate high-latitude problems with the caveat that this imposes special cost and logistical problems on the program.

- the drilling ship is a tool basic to geological sciences in the same way that the telescope is basic to astronomy. Only by collecting samles can hypotheses be tested and thus only by continued ocean drilling can the science progress.

- the proposal should emphasize the importance of returning to areas of previous drilling. (Recent legs -- e.g., 76, 80 and 82) have clearly demonstrated the value of returning to near old sites with new hypotheses, a better understanding of the area, and improved tools.

- committee members noted that even within a 5-year program large geographic and scientific gaps were left in the model ship's track; new questions are arising at a rate much greater than the drill bit can solve them. Ample scientific targets have been defined to develop a 10-year program.

- regional geophysics must be included as an integral part of the whole scientific plan. Isolated site surveys planned only to locate sites does not provide the potential for regional linkage and interpretation necessary to adequately study the problems.

In conjunction with the discussions, W. Hay noted that little thought had been given to use of Glomar Explorer in a riserless mode, inasmuch as most of the planning for the Ocean Margin Drilling Progrm assumed operation with a riser and well-control system. He noted that Glomar Explorer (in a riserless mode) as compared to Challenger would provide high latitude capability, a greater environmental tolerance (capability to operate into storm seasons), a more stable platform under most conditions, and capability for deeper drilling (owing to capability to carry and deploy a longer drill string and casing). Also, the Explorer need not be restricted to an 8-week cycle and greater berthing and laboratory space considerably increases flexibility in program design.

Consensus

ACTION/ Winterer

E. Winterer, acting for JOIDES, and in conjunction with DSDP will continue to develop the fundamentally Challenger proposal, and submit it to NSF at the earliest possible date (late December, early January). He will revise the introduction to focus even more upon the drill ship as a necessary tool to geological science ("telescope philosophy") and write a comprehensive summary to focus the proposal, develop a central theme, and provide a road map through the proposal for the readers. He will expand the scientific narrative to address high latitude problems, but noting problems in using Glomar Challenger here. Alternative model plans could also include other options such as "renting" another ship for the high latitude work.

The upcoming Conference on Scientific Ocean Drilling will provide additional direction and refinement of scientific objectives. Winterer and a PCOM subcommittee will devise ways to incorporate new ideas or directives stemming from the meetings.

352 POTENTIAL NEW JOIDES MEMBERS

I. CANADA

Brian Bornhold (Geological Survey of Canada) briefed the Planning Committee on the status of Canadian participation. Representatives of the Canadian scientific community, government, and industry met with representative of JOIDES, and JOI in October of 1980. At that time the Canadians understood that non-U.S. institutions would be invited to join the Ocean Margin Drilling Program. Although the Canadians were interested in both the JOIDES and OMD programs, they particularly focused their planning on joining the OMDP. As a result of the meeting, the Canadians received a draft of a "memorandum of understanding" from NSF(?) dealing with participation in the Ocean Margin Drilling Program. Later (March of 1981) the Canadians were informed that non-U.S. partners would not be invited to join the OMDP; consequently they have not actively pursued membership since that time.

Canadian industry (especially Petro Canada and Dome Petroleum) was interested in OMDP participation. Bornhold cannot predict what interest it would have in supporting other ocean drilling programs. Bornhold noted, however, that the opportunity to review the draft of the JOIDES 5-year proposal will greatly help the Canadians to understand JOIDES program.

The Australians (P. Cook) have approached the Canadians concerning possible formation of a consortium.

R. Hyndman (Pacific Geoscience Center, British Columbia) will attend the Conference on Scientific Ocean Drilling.

II. AUSTRALIA

Larry Frakes (Monash University, Australia) reported on the status of

Australian membership.

The Australians are optimistic that means can be found to join IPOD. The Consortium for Ocean Geoscientists (COGS) is seeking an agency to join as the Australian member agency. (This would probably be the Bureau of Mineral Resources.)

Frakes noted that acquiring the $2-3 million per year membership fee takes some persuading. The next step is for the Australian government to seek support perhaps a 50 per cent contribution from industry. Australian oil companies appear to be willing to make a commitment and COGS has already received indications of potential support from the Australian Petroleum Exploration Association.

The Australian geoscientists are trying to gain governmental support for travel to JOIDES panel and committee meetings. They hope to participate as guests, and possibly as panel members, fairly regularly.

Frakes also inquired into the possibility of Australian scientists participating on Leg 90 in the southwest Pacific. He noted that the Australians had participated fairly regularly on Challenger cruises before the initiation of IPOD, but because most shipboard berths are now taken by IPOD scientists, the Australians, though interested, have had little opportunity to participate. In view of Australian scientists' special understanding of the area, and ongoing interest in joining JOIDES, the PCOM invited Frakes to encourage interested Australian scientists to apply for inclusion in the SW Pacific shipboard party. Y. Lancelot will also send a letter to Peter Cook (COGS) inviting the Australians to suggest people for the cruise with special expertise in the area. (This is consistent with DSDP's policy to encourage participation of a scientists from, and with special interests, the region of drilling.)

N.B./ Lancelot

E. Winterer thanked B. Bornhold and L. Frakes for their interest and comments.

353 SEABED WORKING GROUP

E. Winterer briefed the PCOM on the current status of Seabed Working Group (Nuclear Energy Agency) interest.

Les Shepard (Sandia Labs) recently visited Winterer to discuss continued interest by the Working Groups in participating in a cooperative program with JOIDES. The Working Group's area of interest is shifting somewhat from the Sohm Abyssal Plain to the Nares Abyssal Plain -- an area well within the region of planned Challenger drilling. In fact, during reorganization of the ship's schedule to accommodate the then planned congressional visit in the Virgin Islands, DSDP had considered drilling a hole in this area; the plan, however, did not mature for a variety of logistical reasons.

The Seabed Working Group is in the process of preparing written proposals for submittal to various JOIDES panels (especially SP[4], IGP, OGP, OPP, and PMP). Winterer has alerted NSF and panel chairmen to the Group's interest and hopes they will be responsive to developing coordinated

scientific plans.

The Seabed Working Group is realistic about costs and appears willing to contribute funds over a period of time. That is, it does not tie budgeting into a one-year period or visualize a situation in which it would "buy a leg." The group appears to be flexible and is not making demands requiring excessive logistical support, but is looking for ways to integrate programs in the existing framework.

In recognizing the potentially interesting science Winterer has encouraged the group to pursue cooperative programs within the subject panels.

354 IPOD DATA BANK

In response to a query from D. Hayes the PCOM noted that the IPOD Data Bank (at Lamont-Doherty Geological Observatory) serves the JOIDES community. Access to data is primarily on a "need to know" basis; the Data Bank should not be construed as a national archive. Transfer of data by scientists to the IPOD data bank does not satisfy any requirement to provide data for the National Geophysical and Solar Terrestrial Data Center in Boulder, Colorado. Individual scientists and/or institutions, not the IPOD Data Bank, are responsible for transferring appropriate data to the N.G.S.D.C.

355 FUTURE MEETINGS

The Planning Committee will next meet

23-26 February 1982
Miami, Florida
(W. Schlager/Jose Honnorez, coordinators)

The meeting will be held at the NOAA facility across the street from Rosenstiel School of Marine and Atmospheric Science. W. Schlager is investigating the availability of reasonably priced lodging nearby. (J. Honnorez will be at sea on Leg 83 until early January.)

All panel chairmen are invited to attend and report at this meeting.

7-9 July 1982
International Institute for Mineral Resources Development
Fujinomiya, Japan
(Kazuo Kobayashi - coordinator)

K. Kobayashi has tentatively scheduled a field trip for 10 July following the meeting.

# # #

The Planning Committee plans, over a period of time, to shift its

meetings to September, May, and January (rather than October, July, and February) to better take advantage of off-season rates and avoid holiday periods. As a first step, it will schedule the fall 1982 meeting for early October. (Fiscal constraints require meeting in October (FY 1983) rather than in September.)

Dennis Hayes invited the Planning committee to hold its fall 1982 meeting at Lamont-Doherty Geological Observatory; tentative dates are 6-8 October 1982.

The PCOM did not firmly schedule a winter (January 1983) meeting but suggests that perhaps a southern U.S. site (Texas?) would be a good candidate. W. Bryant agreed (per phone conversation after the PCOM meeting) to investigate possible sites.

Joe Cann invited the Planning Committee to hold its summer (May 1983) meeting in the United Kingdom. He will present a list of possible sites at the next PCOM meeting. He noted that some very interesting places have limited access. The "spectrum of possible sites would increase if the PCOM members could make firm (and reasonably well coordinated) travel plans, so that meeting logistics could be simplified.

356 CLOSING REMARKS

E. Winterer and the Planning Committee thanked J. Corliss for arranging the meeting in the beautiful setting at Salishan Lodge. The meeting facilities were excellent as was the salmon bake hosted by Oregon State University.

E. Winterer adjourned the meeting at 1300 on 13 November 1981.

Attach appendices from the preliminary draft of the November 1981 Planning Committee meeting minutes (distributed in December 1981).