19-20 March 1981 JOIDES Executive Committee Meeting

M I N U T E S

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ACTION ITEMS
JOIDES EXECUTIVE COMMITTEE
19-20 March 1981

Page	Responsibility	Subject
5	M. Peterson	Investigate the possibility of using Soviet logging tools.
5	M. Peterson	Obtain complete report from co-chief scientists on Leg 77.
14	W. Nierenberg	Appoint members to ad hoc committee to review the objectives of the logging program.
17	E. Winterer	Restore a NW Pacific leg in the 1981-83 schedule.
23	W. Nierenberg	Invite Australia to nominate an organization to become a member of JOIDES
24	W. Nierenberg	Send a letter to inquire about Canadian participation

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M I N U T E S

JOIDES Executive Committee Meeting
19-20 March 1981
Scripps Institution of Oceanography
La Jolla, California 92093

Members Present:

W. Nierenberg (Chairman, SIO)
J. Baker (Univ. of Wash.)
N. Bogdanov (USSR Acad. of Sciences)
J. Debyser (CNEXO - France)
H. Durbaum (FRG)
C. Helsley (Univ. of Hawaii)
J. Honnorez (Univ. of Miami)
J. Knauss (Univ. Rhode Island)
A. Maxwell (WHOI)
W. Merrell (Texas A&M)
N. Nasu (Univ. of Tokyo)
N. Opdyke (L-DGO)
P. Twinn (NERC - United Kingdom)
M. Peterson (DSDP - Non-voting member)

P. Wilkniss (NSF)
E. Winterer (PCOM Liaison., Exec. Sec. EXCOM)
P. Worstell (JOIDES Office)

Not Present:

R. Heath (Oregon State Univ.)

Guests:

J. Clotworthy (JOI)
J. Frautschy (SIO)
W. Hay (JOI)
M. Iida (Ministry of Education, Science and Culture, Japan)
Y. Lancelot (DSDP)
A. McLerran (NSF)
R. Moore (Univ. of Texas)
H. Takeda (Ministry of Education, Science and Culture, Japan)

179 INTRODUCTORY REMARKS

W. Nierenberg opened the meeting and welcomed the Executive Committee and guests to Scripps. The committee approved the minutes of the 18-17 November meeting (Atlanta) and accepted an agenda.

180 NATIONAL SCIENCE FOUNDATION REPORT

P. Wilkniss reported for the National Science Foundation.

I. BUDGETS

A. FY 1981

DSDP-IPOD has not been subjected to budget cuts for FY '81, but owing to increased Glomar Challenger operating expenses, general inflation, and large unexpected expenditures (e.g., an ad valorem tax on ship's repairs) DSDP will need to make adjustments in the budget and can expect the remainder of FY '81 to be fiscally constrained.

B. FY 1982

The current administration has cut the NSF budget across the board. The Carter budget was $1.35 billion; the Reagan budget is $1.03 billion -- $320 million less. Cuts have been most severe in "soft science", e.g., the biological, behaviorial, and social sciences. Some programs have been cut entirely to allow others to continue. The National Oceanic and Atmospheric Administration and the U.S. Geological Survey budgets have also been severely reduced. The Ocean Margin Drilling Program (OMDP) was cut by $4 million. (Funds for long-term procurement items, which were more difficult to defend in the FY '82 budget, were cut).

In view of the serious budgetary constrictions, the DSDP-IPOD program fared exceedingly well. Its success may be credited in large measure to the international character of the program, and the real sense of international cooperation it embodies.

To date, of the $26 million requested by the National Science Board for the 1982 program, NSF has committed its full $14 million, and other U.S. agencies have committed $1.3 million of the $2 million needed. Owing to large budget cuts, the U.S. Geological Survey cannot contribute as hoped, which accounts for the $0.7 million shortfall in the other U.S. agency contribution. (The non-U.S. partners will meet with NSF later in the month to discuss specific commitments.)

II. DIVISION OF OCEAN DRILLING

NSF has now established the new Division of Ocean Drilling Programs under which the DSDP-IPOD and OMDP programs fall. Peter Wilkniss is division director and Ian MacGregor has been offered the

position of chief scientist. The division is organized into three units as follows:

1. DSDP-IPOD Field Office (A. McLerran)

2. Science (I. MacGregor?)

   a. Ocean Margin Drilling Program

   b. DSDP-IPOD

3. Engineering and Operations (W. Sherwood)

III. AUSTRALIAN VISIT

A delegation comprising R. Brett (NSF), P. Wilkniss (NSF), M. Peterson (DSDP and JOIDES), and B. Lewis (JOI) attended a workshop in Canberra to discuss membership in JOIDES. P. Wilkniss reported that it was an excellent experience and complimented the Australian scientists on their well organized meeting and united support of membership. NSF encourages expanded JOIDES membership, recognizing the value of both additional funding and new ideas. (Australian membership is discussed further under Item 185-I).

IV. COSOD

The Foundation feels a proposed Conference on Scientific Ocean Drilling (COSOD) must be broadly based; it should address ocean drilling in a global context and include non-U.S. participation. (See also Item 185, below.)

V. OCEAN MARGIN DRILLING PROGRAM

The U.S. will not invite non-U.S. participation in the OMDP at this time. Development of the OMDP is very complex involving, negotiations between U.S. universities, industry and government agencies -- all within the context of a new congress and presidential administration. NSF expects to continue the general information exchange, and encourages interest in the program, but cannot take official steps to invite non-U.S. countries.

Question: When will NSF consider non-U.S. participation?

Wilkniss: We don't know that now, possibly at the end of the planning phase -- toward the end of calendar 1982.

VI. DARPA

NSF is nearly ready to make final a contractual agreement with DARPA for the NW Pacific operation. The contract will contain clauses to protect SIO and DSDP. Development of the downhole instrument

package will cost $9 million.

VII. REPORTS FROM NON-U.S. PARTNERS

In conjunction with the 1982-83 budgets W. Nierenberg asked the non-U.S. members to comment on the status of scientific funding within their respective nations.

Debyser (France): We are still discussing the (1982) budget, but funding for science in general is in a period of austerity.

H.-J. Durbaum (FRG): Our budget for marine sciences has been cut by 25 per cent. This, however, does not affect our $2 million commitment to the FY '82 JOIDES program. There is a very positive and wide interest in participating in the Challenger program within the German scientific community, and at least 20 institutions support participation in the OMD program, as well. Organizing participation in OMD, however, would be a long process. If non-U.S. participation in OMD is ever to be invited, we urge an early start as it could take years for its approval within the German system.

N. Nasu (Japan): IPOD has established a excellent reputation in Japan. The IPOD oversight group favors increasing the dues to $2 million. This recommendation has been forwarded to the Ministry of Education and it also requires approval of the Ministry of Finance. We are very optimistic, but will not have an answer until the end of December. In general, our country is promoting the sciences and the oceanography budget has been increased.

(N. Nasu also introduced his two guests, M. Iida and H. Takeda, both from the Ministry of Education, Science, and Culture of Japan.)

N. Bogdanov (USSR): The Soviet scientific community continues its interest in, and favors continued support of, IPOD. In general, scientific interest in continuing the program is high, but more and more political and budgetary problems need to be resolved.

P. Twinn (U.K.): Increasing numbers of people are interested in the IPOD Program. Although our budgets are also taking cuts I am optimistic problems can be overcome.

181 DEEP SEA DRILLING PROJECT

M. Peterson reported for the Deep Sea Drilling Project.

I. BUDGETS

A. FY 1981

The FY 1981 budget is tight. Built-in escalating prices, a major cost increase from the drilling subcontractor (Global Marine), and the

ad valorem tax[1] have seriously cut into 1981 budgeted funds. DSDP is attempting to preserve the logging program and NSF has orally assured the project that if DSDP defers publication of 2 initial report volumes until FY 82, an additional $200 thousand can be made available for FY '81 operations. Independently, an additional $150,000 would also be made available. This will allow for logging (Schlumberger) during Legs 80 and 81, but not during Leg 79.

Discussion

Members of the EXCOM expressed concern about the lack of logging on Leg 79. N. Bogdanov noted that Soviet logging tools may be available for Leg 81 — possibly releasing some funds for Leg 79 logging.

ACTION/ Peterson — M. Peterson agreed to investigate the possibility of using Soviet logging tools.

DSDP has generally been dissatisfied with Gerhardt-Owens, the present logging contractor. The problem has primarily been logistical: the subcontractor does not maintain adequate back-up tools and repair parts on board Challenger. DSDP chose to log Legs 80 and 81, rather than 79 and 80, following the Planning Committee's priorities.

The EXCOM discussed Leg 79 logging at various times during the meeting. See more discussion under Item 183-III.

B. FY 1982

NSF has requested $22.5 million for DSDP operations during FY 1982.

II. OPERATIONS

A. Leg 77

Leg 77 was scientifically very successful. The drill sampled strata which suggest the Gulf of Mexico formed much later than the opening of the North Atlantic.

On the other hand, poor communication with the ship posed a problem for DSDP during Leg 77. Drilling encountered tar-filled cracks and although the shipboard scientists judged the hydrocarbon to be immature, Safety Panel members questioned whether the shipboard party could make that judgement with the equipment and data available on board ship. The problems were exacerbated by poor ship-to-shore communication.

ACTION/ Peterson — DSDP will get a more complete report on the possible breach of shipboard safety guidelines from the cruise co-chief scientists and will submit their conclusions at the next Planning and

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[1]The Ad Valorem tax claims up to 50% of the cost of ship's repair upon return of a U.S. ship to a U.S. port following its repair in a foreign port. The tax may cost DSDP $170 thousand for the 1979 Norfolk port call and $26-27 thousand for a 1976 San Juan port call.

Executive committee meetings.

B. Leg 78A

Leg 78A successfully drilled into the thrust zones presumed to overlie subducted sediments. Coring recovered scaly, foliated claystone and documented a stratigraphic inversion. Despite three attempts to drill deeper, fractured and sheared rock forced its abandonment. Attempts to case the hole with drill-in-casing failed when the bit-release mechanism would not work. The casing, however, was successfully "drilled in." This was the first time the technique had been tested. It also created an accidental packer experiment which indicated a downhole pressure in excess of 300 psi over hydrostatic pressure.

The Dunnebier downhole seismic experiment at the oceanic reference site was not successful; although operational on deck, the seismometer did not record properly downhole.

Leg 78B

At the time of the meeting, Glomar Challenger had just located the cone and re-entered Hole 395. (The cone had been set and the hole originally drilled 5 years previously.) DARPA will test the design of its downhole emplacement system here.

III. ENGINEERING DEVELOPMENTS

The variable-length hydraulic piston corer is nearly complete and will be tested during the spring of 1981, possibly during Leg 80.

Work on the extended core barrel has been delayed somewhat, but the tool's development is also nearing completion and should be tested during spring 1981.

DSDP is considering developing a clean-out bit to clear out bridges formed in the hole. It would be used during logging operations.

182 JOINT OCEANOGRAPHIC INSTITUTIONS

I. OCEAN MARGIN DRILLING PROGRAM (OMDP)

A. Maxwell, Chairman of the OMDP Science Advisory Committee (SAC), described the SAC planning structure and timetable (Fig. 1). OMDP planning is proceeding on two separate fronts: scientific planning and engineering. Maxwell relayed aspects of the scientific planning only. (Engineering development falls within the purview of NSF.)

The SAC currently comprises one member from each JOI institution (=10), one member from each participating oil company (=10), and three other members.

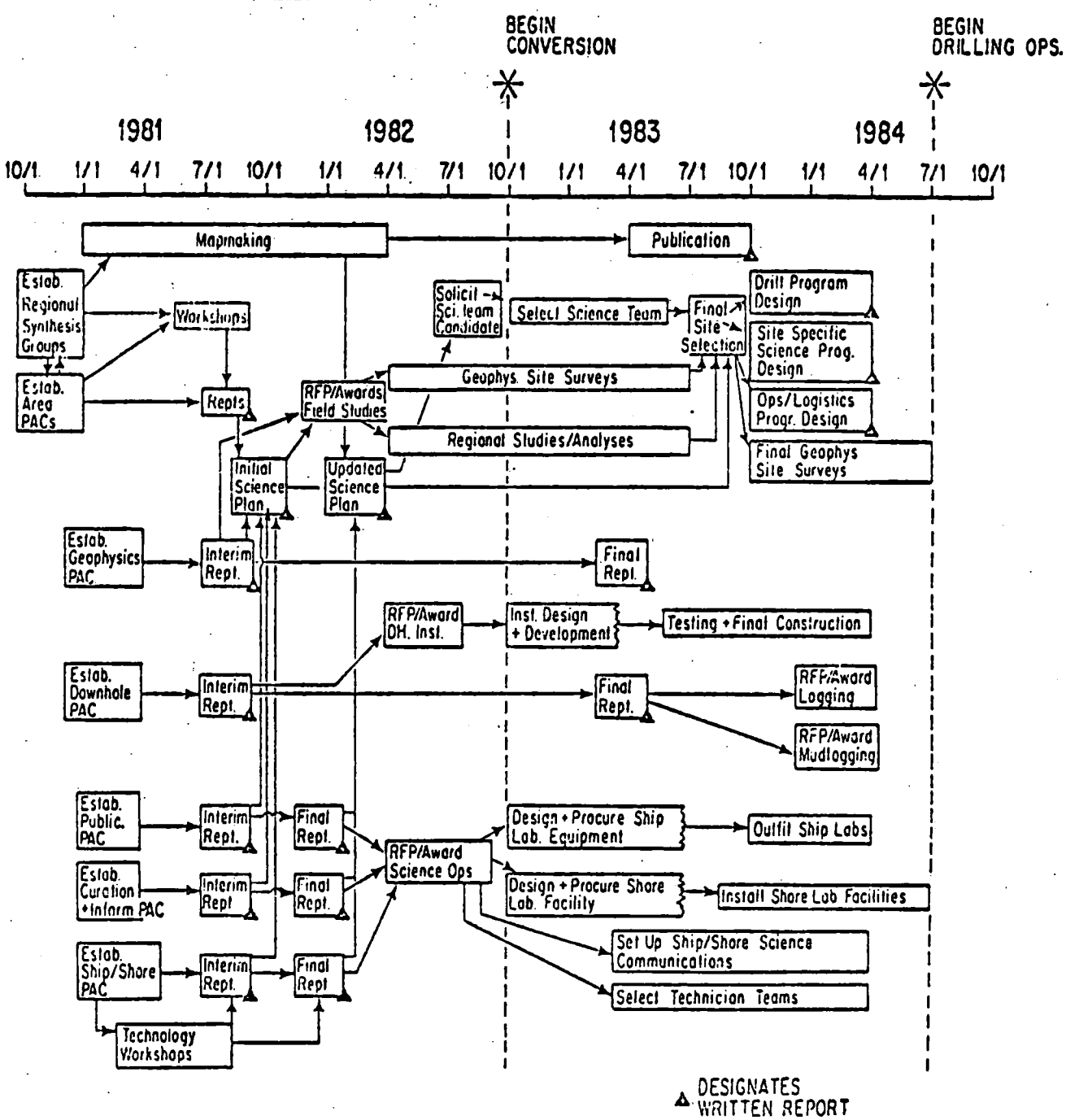

Figure 1. SAC planning structure and timetable.

The five Planning Advisory Committees have contracted regional syntheses of the 11 target areas. Workshops scheduled for this summer (1981) will evaluate the series of maps and other data produced by the syntheses studies. Reports generated will serve to define scientific problems as well as geophysical and downhole logging requirements. Geophysical and downhole advisory committees will plan the instrumentation.

The Publications, Curation and Information, and Research Facility Advisory Committees will plan the scientific operations information handling, (ship and shore laboratory equipment, shore-based laboratory facilities, technician teams.)

During 1982, JOI will identify and award contracts with the core scientific teams, for geophysical surveys, regional studies, design and development of downhole instrumentation and associated science operations. NSF will award the systems integration contract in 1981.

The core scientific team for each site will comprise six scientists who will be responsible for all aspects of the scientific endeavor at that site. The ship may remain on a single site for 6 to 9 months. The scientific team will plan the effort, design the program, participate on board ship, collect and analyze the data and prepare the reports. Scientific team candidates will be solicited with a Request for Proposal issued in mid-1982.

The decision to go or not to go with the OMD program must be made, according to the current timetable, before October 1982 — the time at which ship conversion would begin.

Discussion

Some points from the ensuing discussion follow:

- The OMD planning structure is fundamentally different from that of JOIDES in that the PACs are ad hoc committees. Only the Science Advisory Committee lives on to provide continuity. The other committees are preliminary review committees which develop Requests For Proposals (RFPs) and review the resulting proposals. The RFP system invites participation from a broad community; the PAC members define the targets but do not become directly involved with the science or operations once the RFPs are written and the grants awarded.

- The question of non-U.S. partners in OMDP will not be addressed until, perhaps, late 1982. Individual non-U.S. scientists and/or scientific teams are encouraged, however, to participate in the scientific work as part of a shipboard team, in site surveying, or in any number of positions which would be open to individual scientists. This would be similar to the way the non-U.S. members participated in the Deep Sea Drilling program before its International Phase began in 1975.

II. BOARD OF GOVERNERS

J. Baker, Chairman of the JOI Board of Governors, reported two new members on the board: Niel Opdyke representing Lamont-Doherty Geological Observatory and Robert Ried representing Texas A&M.

III. SITE SURVEYS

The JOI Site-Survey Planning Committee met last December to prepare RFPs for the 1982-83 Challenger drilling program. The Committee issued RFPs in February for the (a) western Pacific, (b) equatorial Pacific and (c) hydrogeology leg (south Pacific). Four proposals received in Washington by the 11 March 1981 totaled $1.47 million, of which $1.3 million has been budgeted. The JOI site-survey committee will meet at SIO, 2-3 April to review the proposals.

183 PLANNING COMMITTEE REPORT

E. Winterer reported for the Planning Committee which met at SIO, 24-27 February 1981.

I. PANEL REPORTS

The JOIDES panel chairmen attended the February Planning Committee meeting and relayed summaries of their panel's past year's activities and/or items requiring PCOM/EXCOM action. E. Winterer relayed items of interest to the EXCOM from the panel reports. (See also PCOM Item 327.)

A. Site Survey Panel

The Site Survey panel has noted problems in ensuring adequate site survey coverage owing to (a) the late acceptance of the 1981-83 drilling proposal and (b) poor communication between the Site Survey Panel, the JOI Site Survey Planning Committee, and site proponents.

The PCOM informally accepted a planning structure which places the initiative in the hands of the site proponents. The proponents will determine what data exists, what data are needed, and also provide direct liaison to the SSP. The "ideal scenario" is given on Figure 2. (See also Item 183-I-A from the February 1981 Planning Committee minutes.)

C. Helsley noted that more and/or better interpreted paleomagnetic data are needed. Winterer agreed to investigate ways to ensure adequate paleomagnetic data are available.

Winterer also noted that $100 thousand had been designated (per approval of the 1982 budget) for installation of a high-resolution near-bottom seismic system onboard Glomar Challenger and inquired as

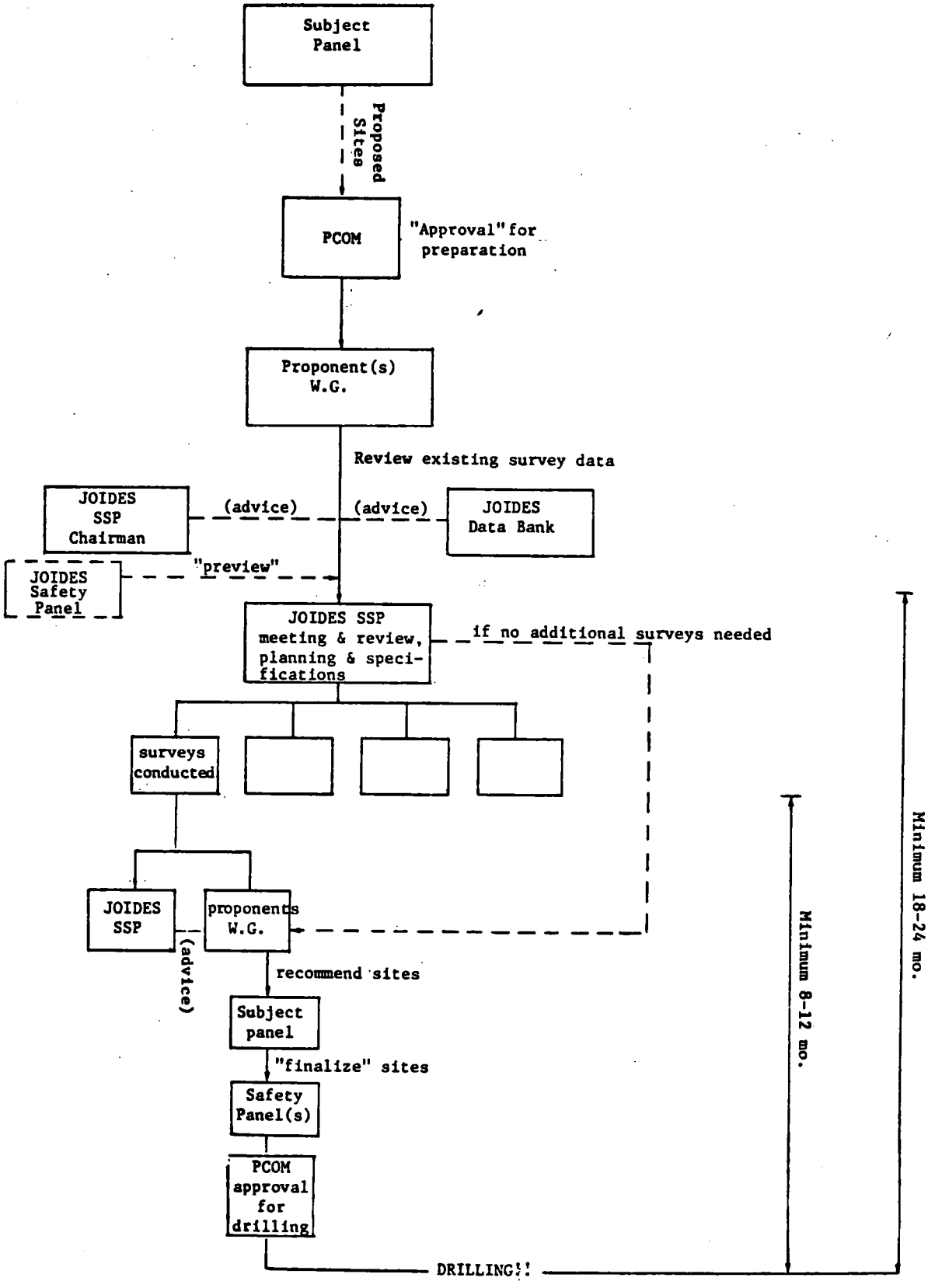

Figure 2. "Ideal" Scenario

Figure 2. "Ideal" Scenario

to the status of the funds. W. Hay indicated that he did not know about the status of the funds other than that they had been requested in the site survey part of the 1981-83 proposal to NSF.

B. Information Handling Panel

France and the Soviet Union have recently established JOIDES/DSDP data centers. The Planning Committee supports the centers and adopted the following resolution:

> The Planning Committee recognizes the efforts of Soviet and French scientists to establish working DSDP data base. Already beneficial results have been seen and further dissemination of information should be encouraged. Significant additional benefits will accrue from cooperative consideration of problems within the data base by personnel of the three active groups.

Following discussion, R. Merrell moved (seconded by C. Helsley) the Executive Committee endorse the Planning Committee resolution.

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

* * *

Details of panel reports to the PCOM are noted under Items 327 and 329 in the 24-27 February PCOM minutes.

II. MEMBERSHIP - ALL PANELS

A. Ocean Crust Panel

P. Fox will retire from the Ocean Crust Panel after two more OCP meetings.

E. Winterer moved that H. Schouten (WHOI) be asked to chair the Ocean Crust Panel[1].

The EXCOM unanimously approved the motion.

J. Honnorez noted that he understood Schouten would decline the invitation. The EXCOM nonetheless endorsed the appointment and will await Schouten's decision and the PCOM recommendation before taking additional action.

B. Active Margin Panel

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[1]The motion, having been made by the responsible committee chairman, requires no second.

R. von Huene will retire from the chairmanship of the Active Margin Panel following that panel's April (1981) meeting. Two other members (J. Watkins and W. Dickinson) will leave the AMP shortly.

E. Winterer moved that Donald Hussong (HIG) be asked to chair the Active Margin Panel.[1]

The EXCOM unanimously approved the motion.

E. Winterer moved that John Ladd (L-DGO) be asked to join the Active Margin Panel, replacing J. Watkins.[1]

The EXCOM approved the motion unanimously.

(The AMP will recommend a replacement for W. Dickinson to the PCOM at a later date.)

C. Passive Margin Panel

R. Sheridan (chairman) and J. Grow will end their membership on the Passive Margin Panel 1 September 1981.

E. Winterer, acting for the Planning Committee, moved that Dave Roberts be asked to chair the Passive Margin Panel.[1]

The Executive Committee approved the motion unanimously.

E. Winterer moved that W. Ryan and C. Keen be asked to join the Passive Margin Panel replacing R. Sheridan and J. Grow.

Discussion

The Executive Committee in discussing the motion considered carefully the overall composition of the Passive Margin panel in an attempt to establish a good balance for planning beyond 1983. The EXCOM considered whether the panel membership should reflect interests in the current N. Atlantic drilling programs or whether it should identify new problems to be addressed in the next 10 years. The passive margin drilling is currently trying to test existing hypotheses, but inasmuch as Glomar Challenger cannot penetrate deeply enough to sample crucial horizons beneath thick sediments, more thinly sedimented margins have been drilled.

Should the PMP emphasize drilling deep structures or the study of sedimentary processes (slope stability, erosion, slope-rise construction fan formation and migration)? W. Ryan could be expected to emphasize sedimentary processes, C. Keen to support deep penetration. Some EXCOM members viewed the long-term focus for Challenger drilling should be toward more shallow objectives (i.e., address sedimentary

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[1]The motion, having been made by the responsible committee chairman, requires no second.

processes) presuming that the Ocean Margin Drilling Program using Glomar Explorer would address the deeper drilling.

E. Winterer noted that in its review of the JOIDES/DSDP 1981-83 drilling proposal, the National Science Board recommended that the program be kept broad, i.e., not focus overly on hydraulic piston-coring. "The future of Glomar Challenger is no more uncertain than that of Glomar Explorer."

The EXCOM did not resolve the question of the desirable degree of overlap between Challenger- and Explorer-type drilling, but stressed the need to select panel members with a view toward future planning.

Vote: 12 for, 0 against, 0 abstain. The EXCOM unanimously approved the motion to extend invitation to W. Ryan and C. Keen to join the Passive Margin Panel.

E. Winterer also noted that the non-U.S. members are designated to serve on specific panels by their respective agencies and urged that the non-U.S. people responsible for delegating members help ensure a proper balance on the various JOIDES panels.

D. Ocean Paleoenvironment Panel

Three members (W. Sliter, W. Berger and W. Ruddiman) have, or will be, leaving the Ocean Paleoenvironment Panel.

E. Winterer moved that Robert Garrison (U.C. Santa Cruz) and Fritz Theyer (HIG) be invited to join the Ocean Paleoenvironment Panel[1].

The Executive Committee unanimously approved the motion.

E. Inorganic Geochemistry Panel

J. Gieskes and F. Manheim will be retiring from the Inorganic Geochemistry Panel.

E. Winterer moved that M. Kastner (SIO) and F. Sayles (WHOI) be invited to join the Inorganic Geochemitry Panel, replacing J. Gieskes and F. Manheim, respectively.[†]

The Executive Committee unanimously approved the motion.

F. Sedimentary Petrology and Physical Properties Panel

The SP[4] recommended to the PCOM that J. Conolly, who had been unable to attend several meetings, be replaced by Leland Kraft (McClelland Industries).

E. Winterer moved that L. Kraft be asked to join the Sedimentary Petrology and Physical Properties Panel, replacing J. Conolly.[†]

See footnote on p. 14.

The Executive Committee approved the motion unanimously.

E. Winterer also reported that Jose Honnorez will replace Wayne Bock as alternate to the Planning Committee from the University of Miami.

III. FY 1981 DRILLING (NORTH ATLANTIC)

A. Leg 79

E. Winterer briefly described the objectives of the Moroccan (Mazagan) drilling, referring to the maps and discussion in the JOIDES Journal (February 1981, p. 40-43). The sequence of holes on the Mazagan Escarpment and Plateau is planned to document the Jurassic environments of rifting and early subsidence history of a passive margin segment bordering on the proto-Atlantic. The Safety Panel has approved the Mazagan sites. Co-chief scientists for the cruise are K. Hinz and E. Winterer.

DSDP is currently making the necessary arrangements to drill within 50 miles of Morocco.

Discussion - Leg 79 Logging

The EXCOM continued its earlier discussion concerning logging on Leg 79. The German and United Kingdom members expressed particular concern that current plans excluded logging during that leg.

M. Peterson and Y. Lancelot reiterated that NSF had not allocated additional funds to cover costs of increased Challenger operation. Only by deferring payment of fuel costs and publication of two Initial Reports volumes could sufficient funds be found to log two legs. DSDP is not satisfied with the results produced by the current logging contractor and chose to log Legs 80 and 81 because the sites are better suited to logging. If DSDP is to log Leg 79, some major aspect of the DSDP program would have to be sacrificed to cover expenses. M. Peterson also indicated that very little time is available for mobilization in Las Palmas.

Following upon these discussions and a meeting between P. Wilkniss, A. McLerran and M. Peterson, P. Wilkniss (NSF) announced that "logging shall be done on Legs 79, 80 and 81."

ACTION/ Nierenberg

W. Nierenberg also suggested that he (Nierenberg) appoint a 4-5 person ad hoc committee to review the objectives of the logging programs from a new perspective and submit these recommendations by mid-September. H. Durbaum noted that a European committee may also choose to review the logging program, but would not support a hiatus in logging.

+ The motion, having been made by the responsible committee chairman, requires no second.

B. Leg 80 (Bay of Biscay)

Leg 80 is planned to study the rifting and subsidence history of a passive margin. Drilling will sample a complete sequence from pre-rift sediments (ARM-1) to younger sediments reachable by a transect of successively higher blocks.

The Safety Panel has approved drilling at ARM-1 (with certain restrictions). Earlier some question existed as to whether or not ARM-1 would be approved. The PPSP also approved GOS-I, -II, -IIA, -IIIA, -IV, -IVB, -IVC and -IVD (some sites with restrictions). The co-chief scientists for Leg 80 are P. deGraciansky and C. Wylie Poag.

C. Leg 81 (Rockall Bank)

The Safety Panel has approved all the Rockall Bank sites.

W. Berggren declined to serve as co-chief scientist. The PCOM recommended that Thor Nielsen or Detmar Schnitker be asked to that post. (D. Roberts is the other co-chief scientist.) D. Schnitker subsequently accepted the invitation to serve as a co-chief scientist on Leg 81.

D. Leg 82 (New Jersey Transect)

The PCOM scheduled Leg 82 to drill the New Jersey Transect[1] -- a five-hole transect on the continental slope and rise to penetrate Tertiary and Upper Cretaceous unconformities. A major objective is to test the validity of the Vail sea-level curve.

Site ENA-3 drilling, which originally was scheduled for Leg 82, is scheduled for drilling in the spring of 1983 (Leg 93).

IV. FY 1982-83 DRILLING

Acting on instructions from the Executive Committee, the Planning Committee developed a 24-month drilling plan during its October meeting (Table II, 15-17 October 1980 Planning Committee minutes. Members later learned that the hydrogeology sites along 15°S (Pacific) required a more elaborate site survey, including acquisition of detailed heat-flow data. At its February 1981 meeting, the PCOM developed a new, somewhat more compact schedule with a counterclockwise ship's track in the Pacific, thus placing the hydrogeology leg later in the program -- January 1983. Table 1 shows the February 1981 PCOM schedule. The PCOM recognizes that the schedule is not completely realistic in that equal time is not alloted to each leg, and that insufficient port and "contingency time" is planned. The

[1] U.S.G.S. Line 25

schedule is proposed as a general working model with the understanding that details would be worked out later.

This schedule differs from the October schedule in that (a) it places the N.W. Africa drilling last, making it somewhat more vulnerable, (b) eliminates the N.W. Pacific leg owing to its lesser priority within the Ocean Paleoenvironment Panel, (c) compresses the drilling in the area of Japan, but allows ample time for drilling the Japanese Trench.

E. Winterer outlined the proposed ship's track, gave a brief description of the scientific objectives at each site and explained the PCOM's rationale in developing the schedule. (Details appear in the 24-27 February 1981 PCOM minutes, Item 330.)

Discussion

Bogdanov: The USSR understands that a cruise would be planned in the N.W. Pacific. Now only the site to emplace the DARPA seismic monitoring system is left in the Program. No other scientific drilling is included and all of the sites suggested by the Soviets in this area have been eliminated. Moreover, the 1984 International Geological Congress will be held in Moscow. We plan a colloquium on Geology of the Oceans, and especially plan to include the west Pacific, and Arctic marginal seas. I have told our Academy of Science that a N.W. Pacific Challenger leg was planned, and if that is not to be the case, we have a politically very difficult situation.

Twinn: Likewise, should drilling ENA-3 be postponed, the U.K. would have specific interest in only one leg during the entire 2-year program. Would it not be possible to drill some holes along the passive margin between Legs 94 (north Atlantic paleoenvironment sites) and 95 (N.W. Africa)? I should like to be able to assure my colleagues and funding agencies that at least a possibility exists for more N.E. Atlantic drilling.

Durbaum: Leg 95, along the N.W. African coast as the last planned leg is highly vulnerable. The group that proposed the sites think drilling them will give excellent science. Perhaps we haven't sold the science well enough, but the N.W. African cruise should certainly be given a higher priority.

Winterer: The recommended program from PCOM is one that carefully balances the scientific priorities of the subject panels, and sites or legs were eliminated only to make certain that the highest priority scientific objectives are met. Although it is possible to modify the schedule, we are dealing with a 0-sum situation. If you now add to the program, something must be subtracted. You are tampering with the best scientific advice of PCOM.

Helsley: Clearly we are trying to do too much within a two-year program.

Debyser: The schedule is well balanced. We can't do everything for everyone in a two-year program. We must consider science only. We should accept the proposed schedule as a general scheme.

Nierenberg: We need to view drilling over the longer-term in order to accommodate everyone's interests.

ACTION/ Winterer

Following additional discussion, and addressing the N.W. Pacific Leg specifically, the EXCOM directed the PCOM chairman to work toward restoring a N.W. Pacific leg in the 1981-83 Challenger schedule.

Winterer asked N. Bogdanov to help him assure that a good scientific plans with adequate and appropriate profiler records be presented for review to the appropriate panels (Ocean Paleoenvironment/Active Margin panels).

In considering the larger problem -- that of satisfying the scientific objectives of all the JOIDES members -- the Executive Committee took the position that only within a long-term program, one not less than 5 years duration, could the many objectives be addressed.

The EXCOM further discussed this position in conjunction with discussions about additional non-U.S. participation. See also the resolution adopted under Item 185 below.

V. POST-1983 DRILLING

The Planning Committee, acting on a mandate from the Executive Committee began to plan post 1983 drilling. The PCOM asked the JOIDES Panel Chairmen to define scientific problems and recommend ways to attack them and to frame their planning and resultant white papers in terms of appropriate inclusion in the proposal to NSF and also for consideration at the proposed Conference on Scientific Ocean Drilling (Item 184 below). During the summer (1981), E. Winterer, with the help of the Planning Committee and Panel Chairmen, will use the white papers to create a 5-year drilling proposal to be submitted to NSF in November or December 1981.

The PCOM developed and distributed a set of guidelines to aid panels and working groups in developing their white papers and drilling proposals. The guidelines include:

- Consider long-term experiments; aim for a 5-year program.
- Consider a topic-oriented structure to be consistent with COSOD.
- Assume no political or geographic restrictions. (Although high latitudes pose certain logistical problems, drilling there is not excluded from consideration.)
- Assume no drilling platform restrictions or other research vessel restrictions, although Challenger is the most likely

vehicle for the near future.

- Avoid projects which would create undue safety (pollution) risks.

- Consider regional drilling -- programs where the drilling platform would operate in a restricted area for a longer time, and/or whereby the ship would return to a site with special purpose tools for specific studies.

- Bear in mind possible modifications to Glomar Challenger. In conjunction with the long-term planning, F. MacTernan, reported to the Planning Committee on possible modifications to the Challenger. (See Attachment I.)

- Tie planning into technical feasibility on the basis of what is available now and what will be available in the future.

The resulting white papers would also be submitted to COSOD working groups, and would presumably form a part of the reports presented at the COSOD meetings.

184 CONFERENCE ON SCIENTIFIC OCEAN DRILLING

I. BACKGROUND AND DISCUSSION

Following immediately upon the discussion regarding JOIDES long-term planning, E. Winterer reviewed the status of the Conference on Scientific Ocean Drilling (COSOD). During the November 1980 meeting in Atlanta, the Executive Committee recognized the value of organizing such a conference and appointed a committee, chaired by M. Talwani, to recommend how it should be organized (EXCOM Item 173).

M. Talwani subsequently prepared and distributed the report of his committee for review at the present meeting, (Attachment II). The Talwani report noted that "the conference will examine how the planning for drilling and associated scientific programs can be organized and coordinated to attack the most important scientific problems in the most orderly and productive way."

E. Winterer, reading from the Talwani report, said the conference would be organized around scientific topics including subsidence, diagenesis, ocean climate, deep tectonics, diapirism, hydrogeology, continental break-up, collision and subduction, and seismic stratigraphy. convergent boundaries, chemical structure and evolution of oceanic crust, mid-plate volcanism and tectonism, sedimentary processes.

The Executive Committee will appoint a steering committee, which in turn will appoint small, probably 3-member, topic-oriented working groups, each with a designated leader. The working groups will receive contributions from JOIDES panels, independent groups, and/or individual scientists and will use them to prepare their white papers. Figure 3 shows the general organizational plan.

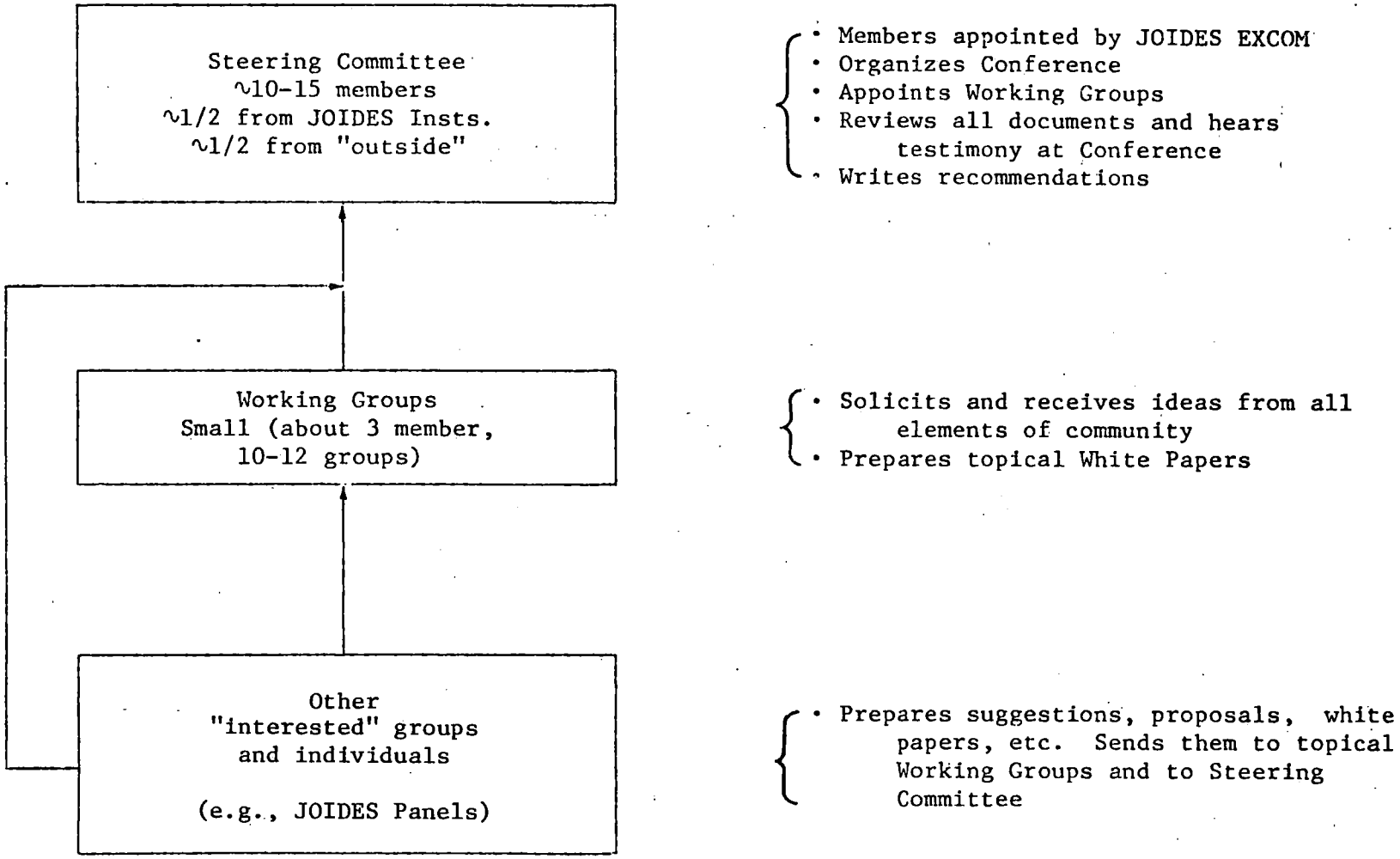

Figure 3. COSOD general organizational plan.

The final conference report would contain a brief general report and recommendations prepared by the entire Steering Committee, plus the white papers -- including additional ideas and discussion generated at the conference. (The entire text of the committee report appears as Attachment II.)

Discussion

The necessity to submit a proposal to NSF by November of 1981 for post-1983 drilling, places a severe time constraint on organizing and convening COSOD — inasmuch as any long-term drilling proposal must be responsive to the conclusions, and therefore await the outcome, of COSOD. Members expressed concern that scheduling COSOD for October 1981 might result in the conclusions of the conference being viewed as simply an extension of the current program. Members were also concerned that less than a full degree of planning would result in a premature proposal.

The EXCOM recognized that JOIDES must go ahead with long-term planning (a draft for the post-1983 proposal) before the result of COSOD are known, but that the final JOIDES proposals must incorporate results of the conference. At the same time, the conference report would be expected to contain many JOIDES documents. Organizationally, however, the JOIDES planning and COSOD planning structures are independent.

Despite the problems in convening an early COSOD, the EXCOM generally agreed that time constraints imposed by the NSF budgeting process required that the COSOD meeting be held no later than October 1981.

Following discussion, C. Helsley moved (seconded by J. Baker) that the Executive Committee adopt the COSOD committee report as terms of reference for the Conference on Scientific Ocean Drilling (COSOD), including additional topics (processes at convergent boundaries, chemical structure and evolution of ocean crust, mid-plate volcanism, sedimentary processes and facies models) suggested by E. Winterer.

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

II. STEERING COMMITTEE

E. Winterer led the discussion about selecting a Steering Committee for COSOD. The EXCOM, in selected potential members, considered that the committee should

a. represent a broad cross-section of the geological scientific community including marine and continental geologists, scientists representing academic institutions, industry, and government agencies, continental margin and deep-sea drilling propgrams, and theorists and those with practical experience.

b. include representatives from non-U.S. countries.

c. comprise very well known and highly competent scientists. (The Steering Committee will issue the COSOD report, and the EXCOM must ensure that their recommendations are authoritative and thus acceptable to the community at large.)

d. maintain a balance between older distinguished scientists and those younger people recognized as currently scientifically active who could be expected to drive the conference machinery.

e. not include many JOIDES Executive Committee members.

f. comprise about 10 people: about five from JOIDES and JOI institutions, four from the academic community, one from industry. The number could be increased if necessary and possibly should include a U.S. Geological Survey person.

g. select a chairman from a JOIDES institution.

Members of the EXCOM also noted that serving on the 3-man topical working groups provided other interested scientists the best opportunity to make a scientific contribution.

Following considerable discussion, the EXCOM, by general consensus, agreed to a list of potential COSOD Steering Committee members and alternates. The Steering Committee would include 8 people from JOIDES Institutions/Countries and 6 people from other parts of the community.

The Executive Committee recommended that R. Larson (URI) be asked to chair the COSOD Steering Committee. The secretariat would presumably reside with the COSOD chairman.

JOI has indicated that it can probably find the funds to sponsor the conference.

W. Nierenberg agreed to contact potential Steering Committee members immediately to get the committee "in place" and the conference planning underway without delay.

185 INCREASED INTERNATIONAL PARTICIPATION

I. AUSTRALIA

A. Report

M. Peterson (representing DSDP and JOIDES) and P. Wilkniss (NSF) reported on a workshop-meeting held 10-12 March in Canberra, Australia to address the topic "Australia and Ocean Drilling." R. Brett (NSF) and B. Lewis (JOI) also attended.

The Australian Consortium for Ocean Geosciences (Peter Cook, Chairman) invited the U.S. representatives to participate in the

workshop, sponsored jointly with the Australian Marine Science and Technology Advisory Committee.

M. Peterson reported that the meetings were highly worthwhile and totally enjoyable. The enthusiastic Australian group expressed a truly united interest amongst the Australian scientists.

The talks resulted in a strong recommendation from the Australians to the Australian government to seek full membership in JOIDES and participate in the DSDP-IPOD program. They expressed interest in both local scientific problems as well as more broad-scale global science. Their primary interests lie in better understanding passive margins, but the Australians are also interested in active-margin problems, especially in the southwest Pacific drilling (Leg 90) and would hope to be involved in future planning.

Kenneth Richards (Production Manager ESSO-Australia) encouraged participation in JOIDES and said he would encourage ESSO to contribute funds to the Australian effort. (Australia, however, would join as a National governmental partner -- not in coalition with ESSO; the funding acquisition would be an internal arrangement.)

The Australian Bureau of Mineral Resources (BMR) may also participate perhaps as the lead agency. Although a government agency, the BMR and academic scientists cooperate closely and the BMR could be expected to represent the academic scientific community.

Although the meetings were not attended by parliamentary representatives, high-level representatives of key government agencies did attend.

P. Wilkniss commented that the workshop was the best organized and best focused national effort that he had seen. The coalition comprises all major universities, government, and industry, and funds for full membership could possibly be available by July 1982.

Discussion

Members of the Executive Committee, reiterated that while they strongly support inclusion of new members in JOIDES and welcome Australia, expanded membership posed certain problems which must be clearly understood. Problems include:

- There is insufficient time within the present drilling program to accommodate the expectations of the existing members. Addition of new members, who will expect some flexibility in the program, will require further adjustments on the part of the existing members.

- The Australian membership may be supported in part by funds from Exxon-Australia. The EXCOM understands that such support would not deflect JOIDES scientific ocean drilling mission toward more economic goals.

- The invitation to Australia would be made with the understanding that that nation would join as a full member.

In reviewing membership, the EXCOM recognized the need for viewing expanded membership in conjunction with a longer-term program. Only in this way could interests of the present and potential partners must be served without dilution of the scientific content of the program.

Following discussion, W. Nierenberg moved (no second required, the committee rule applies) that the Executive Committee accept the following resolution,

> The Executive Committee recognizes the advantages of an expanded membership of IPOD; at the same time it realizes that the accommodation of the interests of such an expanded membership will require longer-term planning than is at present possible. Accordingly we recommend that the future program of ocean drilling be planned and approved for a period of not less than five years.

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

Addressing specifically the Australian membership, W. Merrell moved (seconded by C. Helsley) that the Executive Committee approve the following resolution.

> In view of the enthusiastic and well organized interest of the Australian earth scientists, as represented in a recent workshop on scientific ocean drilling sponsored through the Consortium for Ocean Geosciences of Australian Universities (COGS), and in view of the recommendations formally adopted at that workshop, the JOIDES Executive Committee resolves:

ACTION/ Nierenberg

1. to instruct its Chairman, on behalf of the Executive Committee, to write to the COGS Executive inviting Australia to nominate an organization to become a member of JOIDES, to express the general conditions of membership in JOIDES, and to extend an offer of observer status at JOIDES Planning and Executive Committee meetings in the immediate future.

2. to request the following information be sent to the COGS Executive for their internal information and use

   a. DSDP - 20 additional copies of Proposal UCSD-1734

   b. JOI Inc. Office - 6 copies of the FUSOD report.

3. to encourage Australian national efforts to obtain support for their participation.

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

Following on the above resolution,

W. Nierenberg moved that the EXCOM approve the text of the following letter to be sent to Dr. Peter Cook, Chairman of the Corsortium of Ocean Geosciences of Australian Universities. (The motion does not require a second.)

> On behalf of the Executive Committee of JOIDES, I take great pleasure in inviting Australia to join our organization and participate in its activities. Our invitation is extended after hearing the report of the fruitful meeting of our representatives in Australia.
>
> Membership in JOIDES, and representation on the Executive Committee, is via some competent and representative organization in ocean drilling and the related earth sciences; however, this membership can be consummated only after successful parallel agreement has been reached between the Australian and the United States governments. Among other conditions this entails an annual contribution which is presently contemplated as two million U.S. dollars.
>
> In the interim, we invite you to send scientific observers to the next meeting of the JOIDES Planning and Executive committees.

Vote: 12 for, 0 against, 0 abstain. (The vote includes a proxy vote from J. Knauss who was not sitting in the meeting at the time of the vote.) The motion passed unanimously.

II. CANADA

During a meeting held 23 October 1980 in Toronto, attended by representatives from JOI and JOIDES, and Canadian universities and government agencies, the Canadians expressed an interest in joining the Ocean Margin and/or JOIDES drilling programs. (EXCOM Item 172, Atlanta Meeting.) At that time non-U.S. participation in the OMDP was an open question and the Canadians expressed particular interest in joining that program, especially in participating during its developmental phase to share in the technology.

At the present meeting, the Executive Committee discussed the possibility that the Canadians might also be prepared to formally join JOIDES, but had no unambiguous indication of their interest. Following discussion, the EXCOM instructed its chairman to write the appropriate Canadian representative inquiring whether Canada was prepared to receive an invitation to JOIDES similar to that sent to the Australlian (copy of the Australian invitation to be enclosed).

ACTION/
Nierenberg

III. THE NETHERLANDS

A delegation comprising F. Johnson (NSF), P. Wilkniss (NSF), E. Winterer (JOIDES) and W. Hay (JOI) will meet 3 April 1981 with representatives from the Dutch Academy of Sciences and interested scientists to discuss possible membership in JOIDES. E. Winterer will report on the results of the discussions at the next Executive Committee meeting.

186 OTHER ITEMS NOT COVERED ABOVE

I. A SPECIAL THANKS

The Executive Committee extended its best wishes and its sincere gratitude to Peter Twinn, who will be retiring shortly, and who was attending his last Executive Committee meeting. W. Nierenberg noted that throughout its 16-year history the JOIDES/DSDP program had received strong support from the United Kingdom and that Peter Twinn was instrumental in the early discussions leading to formation of the International Phase of Ocean Drilling. The Executive Committee recognizes Peter Twinn's great contribution to both JOIDES and the scientific community in general and wish him every success in his future endeavors.

II. MICROFOSSIL REFERENCE CENTERS

E. Winterer reported that W. Riedel (DSDP curator) saw no particular objection to L-DGO's proposal to serve as a microfossil reference center, provided that its establishment did not exclude another east coast (U.S.) institution from also serving in that capacity.

N. Bogdanov also offered the USSR Academy of Sciences as a site for a microfossil reference center.

Owing to the late hour, the EXCOM tabled discussion on the reference centers until the next (Hannover) meeting.

187 FUTURE MEETINGS

The Executive Committee wil hold its next meetings

12-14 August 1981
Bundesanstalt für Geowissenschaften
und Rohstoffe
Hannover, F.R.G.
H.-J. Durbaum -- Coordinator

Dr. Durbaum has planned a field trip into the Harz Mountains on 13 August, in conjunction with the meeting.

3-4 December 1981
San Francisco area

The American Geophysical Union meeting will be held the week of 7 December 1981 in San Francisco. The EXCOM selected the dates and place to allow members to conveniently attend the AGU meeting.

Spring 1982
Alton-Jones Center
University of Rhode Island
J. Knauss -- Coordinator

The EXCOM accepts with pleasure J. Knauss' invitation to meet at the University of Rhode Island. The specific meeting dates will be determined at a later date.

August 1982
Kyoto, Japan

Noriyuki Nasu invited the Executive Committee to meet in Japan during August 1982. The Executive Committee is very pleased to accept the invitation, and will establish specific dates at a later date.

188 CLOSING REMARKS

W. Nierenberg thanked the Executive Committee for its highly productive meeting. Calling it a "wonderful experience," he particularly complimented the committee on its keen spirit of cooperation, and its fine example of how nations and agencies can work together toward a common goal -- the growth of knowledge about the physical world in which we live.

UNIVERSITY OF CALIFORNIA, SAN DIEGO

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SCRIPPS INSTITUTION OF OCEANOGRAPHY
DEEP SEA DRILLING PROJECT

LA JOLLA, CALIFORNIA 92093

February 23, 1981

TO: JOIDES Planning Committee

SUBJECT: Future Planning FY 1984 through FY 1988

REFERENCE: JOIDES Executive Committee Request, November 19, 1980

In compliance with the above reference, the Project has conducted a preliminary study on future drilling with the GLOMAR CHALLENGER for a five-year period from FY 1984 through FY 1988 with Project Phase-Out in FY 1989.

The subject report covers:

I. Scientific Goals as defined by the Chairman of PCOM so a base could be established for this study. The science priorities are subject to review by the PCOM.

II. The Engineering Project required to accomplish Item I.

III. The Operation Cost and Performance Record of the GLOMAR CHALLENGER.

IV. The Modification to the GLOMAR CHALLENGER to improve her capabilities.

V. A Preliminary Financial Plan.

The scientific objectives to be addressed during the drilling program will require new engineering developments of tools and systems. Final priorities in the science should be developed by the scientific community so as to schedule the engineering developments to meet the need in a timely manner. The subject study must be considered preliminary since time did not permit detailed analysis of all aspects of the Project that would go into the makeup of a final proposal. Caution must also be used in the interpretation of cost of the ship modifications since capital investments of this magnitude are subject to negotiation and in some cases shared or alternately assumed by the operator who would expect to get a return on his investment through the ship operational rate.

It is hoped that the attached provides the initial data for the PCOM to proceed with their planning.

F. C. MacTernan

ATTACHMENT I

I. SCIENCE

FY 1984 - FY 1988

Scientific Goals

- Drilling

  Barren Rock
  Hydrothermal & Fracture Rock
  Deep Trenches
  Limited Margin

- Instrumentation - Downhole

  Transit Instruments
  Long-Term Instruments
  Integral Instruments
  Optimum - Logging Instruments

- Geotechnical

  Hydrofracture Measurements
  Permeability Studies

- Cores

  10cm Core
  Hard Rock Pressurized Core
  Orientation

II. ENGINEERING

FY 1984 - FY 1988

The following engineering programs are proposed to meet the scientific requirements of the FY 1984-1988 program.

° Drilling

Long Drill String - 28,000' ±
Third Casing String
High Temperature Drilling Capability
"Crinkle Dam" - Bare Rock Drilling System
Improved Mud System
Improved Penetration Studies:
    Slim Line Riser System
    Concentric Drill Pipe System
    Air-Lift Circulation System
Small Diameter Re-entry Cone and System

° Instrumentation - Downhole

Wireline Re-entry
Instrumented Core Barrels (Piston, Pressure, Standard)
Improved Logging Tools and System
Wireline Heave Compensator

° Geochemical/Geotechnical

Borehole Dual Packer System (Frac./Flow Meas.)
Large Scale In-Situ soils measurement System

° Coring

10cm Piston Coring System
Hard Rock Pressure Core Barrel
Hard Rock Orientation System
Core Bit, Diamond Bit, Turbo-Bit Development
Vented Core Barrel
Controlled Circulation Corer

Estimated Cost - $2,500,000

III. OPERATION COST & PERFORMANCE FOR GLOMAR CHALLENGER

FY 1984 - FY 1988

The performance of GLOMAR CHALLENGER through December 31, 1980 is shown in Exhibit 3. It should be noted that the breakdown rate is 4% for calendar year 1980. However, a major portion of the 4% breakdown occurred in December of 1980 and was caused by (1) a failure of the stern thruster, (2) failure of propulsion engine #3. Also, the 4% breakdown includes the steaming time from failure to port.

Specifically for calendar year 1980, the ship's performance was as follows:

Operations	51.4%
Cruise between Sites	29.7%
Standby (in port)	12.3%
Breakdown	4.0%
Weather Downtime	2.6%

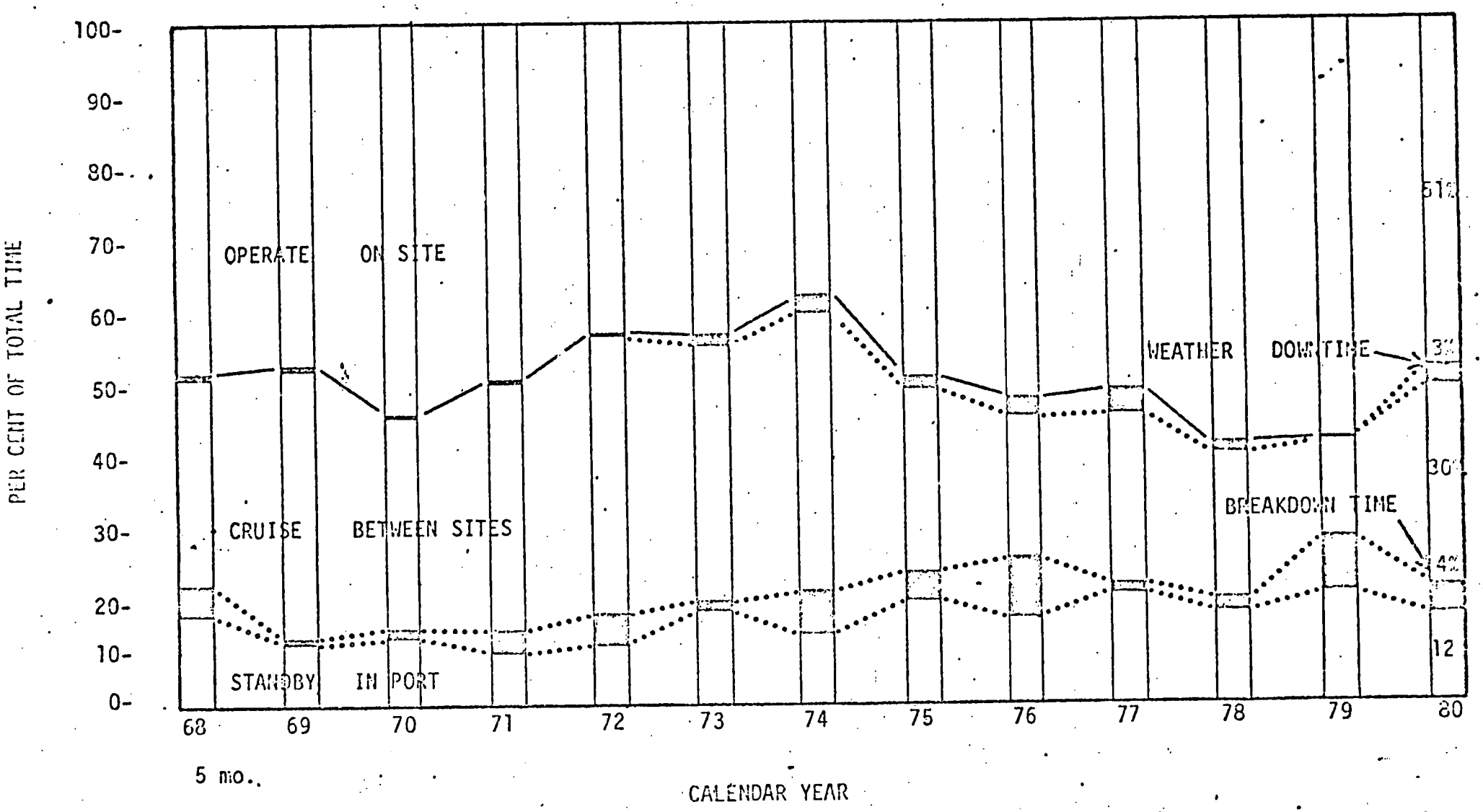
A study was conducted by the Project and Global Marine to forecast the GLOMAR CHALLENGER operational rates for FY 1984 through FY 1988. The major rate for operations, cruise and downtime is forecast as follows:

Fiscal Year	Rate ($)
1984	45,534
1985	48,902
1986	52,623
1987	56,722
1988	61,218

In addition to the above, the operational cost of the GLOMAR CHALLENGER was compared to the projected cost of the GLOMAR EXPLORER (in various modes of operation) and to existing day rates of current drill ship with positioning capability. These comparisons are shown on Exhibit 4.

Exhibit 3.

GLOMAR CHALLENGER
PERFORMANCE RECORD



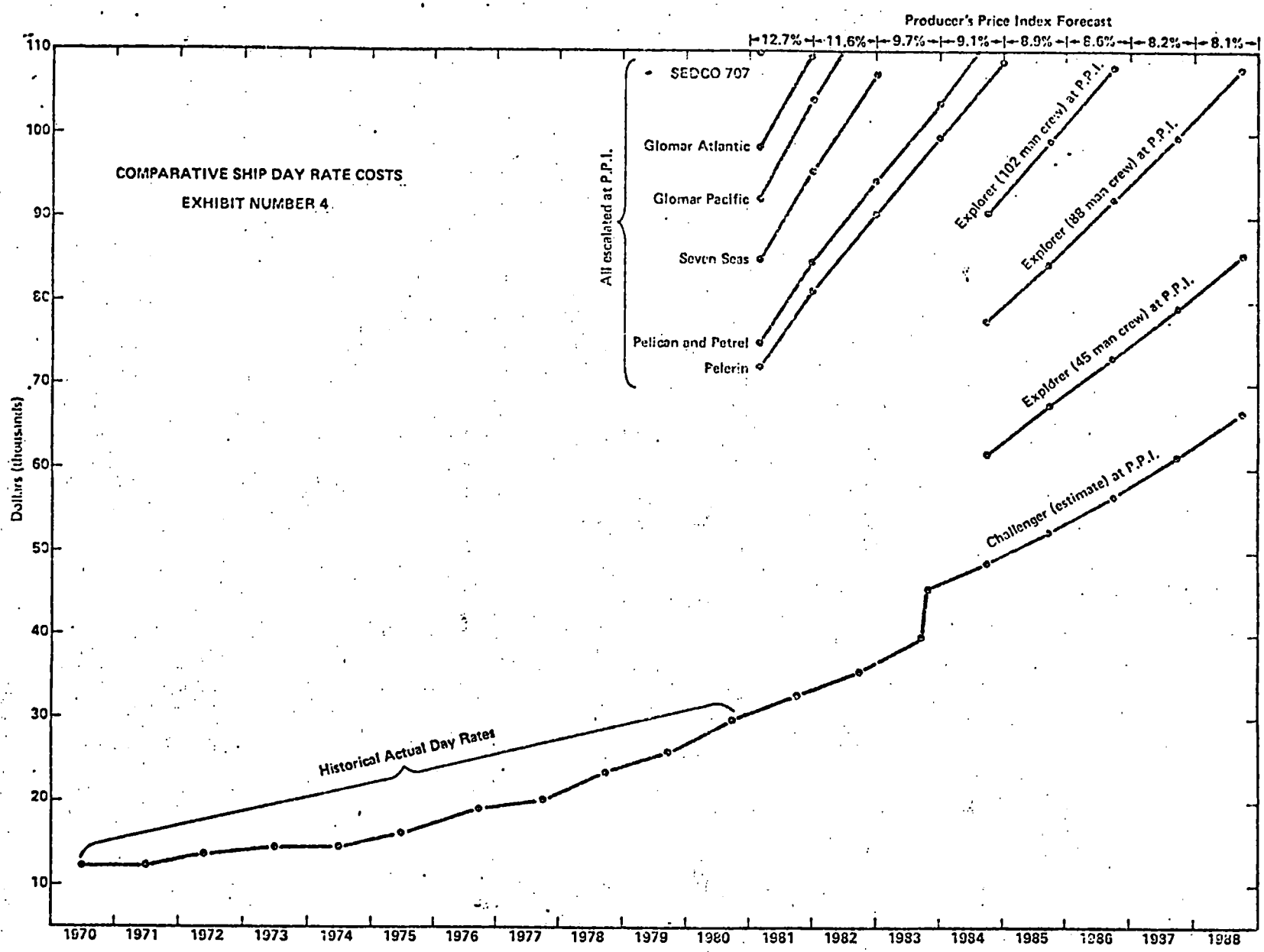

COMPARATIVE SHIP DAY RATE COSTS
EXHIBIT NUMBER 4
Producer's Price Index Forecast
12.7%
11.6%
9.7%
9.1%
8.9%
8.6%
8.2%
8.1%
All escalated at P.P.I.
SEDCO 707
Glomar Atlantic
Glomar Pacific
Seven Seas
Pelican and Petrel
Pelerin
Explorer (102 man crew) at P.P.I.
Explorer (88 man crew) at P.P.I.
Explorer (45 man crew) at P.P.I.
Challenger (estimate) at P.P.I.
Historical Actual Day Rates
Dollars (thousands)
110
100
90
80
70
60
50
40
30
20
10
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988

Exhibit 1.

SUMMARY

Item	Description	Total Est. Cost
1.	Repower and Replacement of Power Distribution System	$9,337,770
2.	Add 3rd Drawworks Motor	87,400
3.	Additional Bow Thruster	700,350
4.	Install In-Line Motion Compensator	3,095,500
5.	Modify Pipe Racker	384,560
6.	D.P. System	2,809,890
7.	Access to Stern Thrusters	174,000
8.	After Crane Renewal	338,675
9.	Renew Evaporators	285,200
10.	Increase Speed	N.C.
11.	Stability	24,000
12.	Maintenance	1,641,000
13.	Engineering and Supervision	1,659,815
14.	Drydock, Tank Cleaning and Services	243,777
15.	ABS/USCG Requirements	40,000
16.	Trip Time Improvement	1,450,000
	Total Items 1-16	$22,271,937
	Contingency 15%	3,340,790
	Grand Total	$25,612,727

Note: For budgetary purposes, the estimated time in a first-class shipyard to complete all of the above-work is 180 days.

Exhibit 2.

ESTIMATED COSTS
FOR
UPDATING PROJECT FURNISHED EQUIPMENT

1.	Re-Entry System	$250,000
2.	Weather Equipment	60,000
3.	Navigation Equipment	125,000
4.	Communications Equipment	100,000
5.	Logging Winch and Tools	400,000
	Total	$935,000

IV. MODIFICATIONS TO GLOMAR CHALLENGER

FY 1984 - FY 1988

The GLOMAR CHALLENGER was launched in 1968. The ship has been operated in practically all the oceans of the world at a high rate of utilization.

During the past 12 years of operation, many new scientific tasks were assigned--some of which were accomplished at the maximum capability of the CHALLENGER--other tasks were not accomplished because the ship and drill systems were extended beyond the respective capabilities. Some systems and components were re-designed to accomplish the tasks and were generally successful but others were not successful.

During the past years an extensive maintenance and repair program was implemented. The details of this program were presented to the PCOM by my memorandum of December 13, 1979. To maintain a high degree of reliability of the ship and system is a constant and difficult task since there are certain systems which are nearing a "wear-out" point due to the high utilization.

A preliminary study was conducted by the Project and Global Marine to investigate suggested modifications to the GLOMAR CHALLENGER and to develop rough cost estimated to upgrade and modernize the ship to better meet the scientific objectives and to accomplish the operational requirements with a high degree of reliability.

Attached is Exhibit 1, which is a summary of the items studied with an estimate of cost. Due to the time constraints, the study was done very quickly and the costs are accurate within 20%. All the modifications are feasible and will improve the capability of the GLOMAR CHALLENGER.

However, it is recommended that caution be exercised in judging the Grand Total of $25.6 million since this is a rough budgetary cost which is subject to negotiation with Global Marine since the new sub-contract would, as indicated, involve an increase in the ship's operational rates and a write-off of a capital investment. In addition, the time estimate of six months to perform this complete refurbishment of the ship does not necessarily mean a hiatus. These modifications, when selected, could be performed on a "step" basis depending on the modification plan.

In addition to the ship modifications, a study was also conducted to upgrade or replace Project furnished equipment supplied to the vessel. A summary of items and an estimated cost is shown in Exhibit 2.

V. FINANCIAL

FY 1984 - FY 1988

Preliminary Budget Estimates ($ millions)

FY -	1984	1985	1986	1987	1988	1989 (Phase-Out)
Project Costs	15.1	16.1	17.0	18.2	19.5	7.0
Ship Operations and Logistics	19.3	20.8	22.4	24.2	26.2	-
	34.4	36.9	39.4	42.4	45.7	7.0

Total Program Cost (Est.) $205.8 million

Notes:

(1) Above costs are escalated based on the UCLA School of Business and Bank of America Producers Price Index (PPI) Forecasts.

Year	PPI Forecast (+%)
1982	11.6
1983	9.7
1984	9.1
1985	8.9
1986	8.6
1987	8.2
1988	8.1

(2) Ship operations costs are based on a 15% day rate increase effective FY 1984 and a labor rate increase of 12% per year. The latter is slightly above the Consumer Price Index due to the rapid expansion of the offshore drilling industry coupled to a shortage of trained personnel.

(3) Ship operations and logistics cost projections do not include cost of ship modifications. These are subject to negotiation of a new sub-contract for the CHALLENGER.

(4) Project Cost includes the updating of Project Equipment (Exhibit 2) in the amount of $935,000.

Lamont-Doherty Geological Observatory | *Palisades, N.Y. 10964*
of Columbia University

Office of the Director

Telephone: Code 914, 359-2900
Twx: 710-576-2659

To: Dr. W. Nierenburg
Chairman, JOIDES Executive Committee

At the last meeting of the JOIDES Executive Committee an ad hoc committee consisting of Heath, Winterer, Hay and Talwani (Chairman) was asked to recommend the terms of reference, participants and dates for a conference on future drilling. I am pleased to submit a copy of our report.

Manik Talwani

cc: Members JOIDES Executive Committee

ATTACHMENT II

FINAL VERSION

Talwani Committee Report

A conference on the subject of SCIENTIFIC DRILLING IN THE OCEANS IN THE NEXT DECADE will be organized by JOIDES and held in the Fall of 1981.

PURPOSE: Recognizing that

Drilling is the only way to recover materials buried deep beneath the sea floor

The large expense of drilling demands its optimum utilization

Different kinds of sampling requirements call for different drilling capabilities

Complementary activities - e.g., continental drilling, regional geophysics, sampling by submersible, and by conventional oceanographic vessels greatly enhance the value of ocean drilling

Different parts of the world ocean offer the best drilling sites for the solution of specific scientific problems

The conference will examine the question "How can the planning for drilling and associated scientific programs be organized and coordinated to attack the most important scientific problems in the most orderly and productive way".

The conference will not replace the ongoing operational planning efforts for the ocean margin drilling or the Challenger continuation programs. Rather it will serve to examine how these and other scientific efforts can be coordinated, supplemented, and structured in order to achieve the most important scientific goals for the next decade in the most cost effective manner.

PREPARATION FOR CONFERENCE - PREPARATION OF WHITE PAPERS:

The conference will be organized around the study of eight to ten major topics. The following is a preliminary list of topics. (Undoubtedly this list will be modified - by addition, as well as by combination of topics).

Scientific topics
- Subsidence
- Diagenesis
- Ocean climate
- Deep tectonics (e.g. rifting)
- Diapirism
- Hydrogeology
- Continental break up, collision, subduction
- Physical properties of the earth's crust (including magnetic properties)
- Seismic stratigraphy - in the sediments and within basement
- Processes at convergent boundaries
- Chemical structure and evolution of oceanic crust
- Mid-plate volcanism and tectonism
- Sedimentary processes and facies models.

Background topics
- Drilling technology and anticipated advances
- Sampling by means other than drilling

To facilitate the work of the conference, groups usually of three members each (with a designated leader) will be appointed for each of those topics. They will be asked to write a "white paper" on their topic and mail it to all the attendees to the conference six weeks before the start of the conference. The white papers on the scientific topics will address the question "how will drilling advance the state of knowledge in a given topic". It is recognized that the white papers on different topics will not all be structured identically - for some topics advanced formulation of hypotheses is available and these need to be tested by drilling. For others, drilling will have a more exploratory nature. In order to get a wide variety of ideas in the "white papers" various JOIDES panels will be asked to examine one or more of the topics and write on these topics. The scientific community at large will also be asked to contribute ideas on the same topics for consideration by the groups. The groups will then use all the available materials to write the white papers.

ROLE OF STEERING GROUP, ORGANIZATION OF MEETING, WRITING OF MEETING REPORT:

The JOIDES Executive Committee will appoint a steering committee consisting of ten members. It will consist of five members of the JOIDES organization and five outside members. It will primarily be the task of the five JOIDES members of the steering committee to select the groups that will write the white papers and generally organize the conference. The invitees to the conference will consist of steering committee members, the members of the groups that write the white papers and some additional attendees. A principal component of the conference will be the reading of the white papers by the group leaders and their discussion by the conference attendees.

The conference report will have a "front end" written by the entire steering committee. The remainder of the report will consist of white papers (including the discussion of the white papers at the conference.) The responsibility for submitting the white papers will be given to the respective group leaders who prepared the first drafts of the papers for the conference.

PROPOSED DATES:

1. JOIDES EXCOM TO APPOINT STEERING COMMITTEE FOR CONFERENCE	As soon as possible
2. JOIDES MEMBERS OF THE STEERING COMMITTEE MEET AND MAKE SELECTION OF GROUPS FOR WRITING WHITE PAPERS AND TENTATIVE SELECTION OF REMAINING ATTENDEES.	?
3. COMMENTS AND IDEAS FOR INCORPORATION IN WHITE PAPERS ARE SOLICITED FROM JOIDES PANELS AND THE COMMUNITY AT LARGE	?
4. COMMENTS AND IDEAS, above, are received by	22 June 1981
5. GROUPS PREPARE WHITE PAPERS	22 June-28 Aug 1981

6. WHITE PAPERS TO BE MAILED OUT TO CONFERENCE ATTENDEES — 28 Aug 1981

7. CONFERENCE — 5-9 Oct 1981

8. FIRST DRAFT OF REPORT — 9 Oct 1981

M. Talwani, Chairman, ad hoc Committee
R. Heacock
W. Hay
E. Uchupi