MEETING OF THE ODP COUNCIL AND JOIDES EXECUTIVE COMMITTEE
15-17 June 1992
Washington, D.C.

REVISED MINUTES
(Adopted by EXCOM January 26, 1993)

Executive Committee (EXCOM)

N. Bogdanov - Institute of Lithosphere, Moscow (USSR)
G. Boillot - Université Pierre et Marie Curie, Paris (France)
J. Briden - Natural Environment Research Council (United Kingdom)
D. Caldwell - Oregon State University, College of Oceanography
C. Dorman - Woods Hole Oceanographic Institution
R. Duce - Texas A&M University, College of Geosciences and Maritime Studies
H. Dürbaum - Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)
G. Eaton - Columbia University, Lamont-Doherty Geological Observatory
D. Falvey - Bureau of Mineral Resources (Canada-Australia Consortium)
C. Helsley (for B. Raleigh) - University of Hawaii, School of Ocean and Earth Science and Technology
K. Kobayashi - Ocean Research Institute, University of Tokyo (Japan)
M. Leinen - University of Rhode Island, Graduate School of Oceanography
A. Maxwell (Chairperson) - University of Texas at Austin, Institute for Geophysics
M. Moss (for E. Frieman) - University of California, San Diego, Scripps Institution of Oceanography
A. Nowell (for R. Heath) - University of Washington, College of Ocean and Fishery Sciences
B. Rosendahl - University of Miami, Rosenstiel School of Marine and Atmospheric Science
L. Westgaard - European Science Foundation (Consortium for Ocean Drilling)

ODP Council (not also on EXCOM)

E. Cailliau - Institut Français de Recherche pour l'Exploitation de la Mer
M. Fratta - European Science Foundation (Consortium for Ocean Drilling)
N. Görür - Scientific and Technical Research Council (Turkey)
J. Knill - Natural Environment Research Council (United Kingdom)
D. Maronde - Deutsche Forschungsgemeinschaft (Federal Republic of Germany)
R. Riddihough - Geological Survey of Canada

Liaisons

J. Austin - Planning Committee
J. Baker/T. Pyle - Joint Oceanographic Institutions, Inc.
D. Goldberg - Wireline Logging Services (ODP-LDGO)
D. Heinrichs - National Science Foundation and ODP Council
P. Rabinowitz - Science Operator (ODP-TAMU)

Guests and Observers

E. Ambos - National Science Foundation
A. Burns - Joint Oceanographic Institutions, Inc.
R. Corell - National Science Foundation
P. Dauphin - National Science Foundation
P. Dunkelberger - Joint Oceanographic Institutions, Inc.
M. Fitzgerald - Joint Oceanographic Institutions, Inc.

SELECTED ACRONYMS AND ABBREVIATIONS

AGU	American Geophysical Union
AMC	axial magma chamber
ARC	Australian Research Council
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe
BGS	British Geological Survey
BHA	bottom-hole assembly
BHTV	borehole televiewer
BIRPS	British Institutions Reflection Profiling Syndicate
BMR	Bureau of Mineral Resources
BRGM	Bureau de Recherches Géologiques et Minières
BSR	bottom-simulating reflector
CSDP	Continental Scientific Drilling Program
CSG	Computer Services Group (ODP)
CY	calendar year
DCB	diamond core barrel
DCS	diamond coring system
DEA	Drilling Engineering Association
DFG	Deutsche Forschungsgemeinschaft
DI-BHA	drill-in bottom-hole assembly
DOE	Department of Energy
DP	dynamic positioning
DPG	Detailed Planning Group
ECOD	European (ESF) Consortium for Ocean Drilling
ECR	East Coast Repository
EEZ	Exclusive Economic Zone
EIS	environmental impact statement
ETH	Eidgenössiches Technische Hochschule, (Zürich)
FDSN	Federation of Digital Seismic Networks
FMS	formation microscanner
FY	fiscal year
GCR	Gulf Coast Repository
GSC	Geological Survey of Canada
GSGP	Global Sedimentary Geology Program
HRB	hard rock guide base
HRO	hard rock orientation
IDAS	isothermal decompression analysis system
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
IGBP(/PAGES)	International Geosphere/Biosphere Program (/Past Global Changes)
ILP	International Lithosphere Program
IOC	Intergovernmental Oceanographic Commission
IPR	intellectual property rights
IRIS	Incorporated Research Institutions for Seismology
JAMSTEC	Japan Marine Science and Technology Center
JAPEX	Japan Petroleum Exploration Company
JGOFS	Joint Global Ocean Flux Studies
JOI-BOG	JOI Board of Governors
KTB	Kontinentales Tiefbohrprogramm der Bundesrepublik Deutschland
LANL	Los Alamos National Laboratory
LAST	lateral stress tool
LBL	Lawrence Berkeley Laboratory
LIPS	large igneous provinces
LRP	Long Range Plan
mbsf	meters below seafloor
MCS	multi-channel seismic
MDCB	motor-driven core barrel
MOU	memorandum of understanding
MRC	Micropaleontological Reference Center
MST	multi-sensor track
NADP	Nansen Arctic Drilling Program
NAS	National Academy of Sciences
NERC	Natural Environment Research Council
NGDC	National Geophysical Data Center
NRC	National Research Council
NSB	National Science Board
NSERC	National Science and Engineering Research Council (Canada)
OBS	ocean bottom seismometer
ODPC	ODP Council
OG	organic geochemistry
ONR	Office of Naval Research
OSN	Ocean Seismic Network
PCS	pressure core sampler
PDC	poly-crystalline diamond compact (drilling bit)
PEC	Performance Evaluation Committee
PPI	Producer Price Index
RFP	request for proposals
RFQ	request for quotes
RIDGE, InterRIDGE	Ridge Inter-Disciplinary Global Experiments (US and International)
SCM	sonic core monitor
SES	sidewall-entry sub
SNL	Sandia National Laboratory
SOE	Special Operating Expense
SOW	Statement of Work
STA	Science and Technology Agency (of Japan)
TAMRF	Texas A&M Research Foundation
UDI	Underseas Drilling, Incorporated
USSAC	US Scientific Advisory Committee
USSSP	US Science Support Program
VPC	vibra-percussive corer
VSP	vertical seismic profile
WCR	West Coast Repository
WCRP	World Climate Research Program
WG	Working Group
WOCE	World Ocean Circulation Experiment
WSTP	water sampler, temperature, pressure (downhole tool)

JOIDES Committees and Panels:

BCOM	Budget Committee
DMP	Downhole Measurements Panel
EXCOM	Executive Committee
IHP	Information Handling Panel
LITHP	Lithosphere Panel
OHP	Ocean History Panel
OPCOM	Opportunity Committee (disbanded)
PANCHM	Panel Chairs Meeting
PCOM	Planning Committee
PPSP	Pollution Prevention and Safety Panel
SGPP	Sedimentary and Geochemical Processes Panel
SMP	Shipboard Mearurements Panel
SSP	Site Survey Panel
STRATCOM	Strategy Committee (disbanded)
TECP	Tectonics Panel
TEDCOM	Technology and Engineering Development Committee

Detailed Planning Groups (DPG) and Working Groups (WG):

A&G-DPG	Atolls and Guyots DPG (disbanded)
DH-WG	Data-Handling WG
NAAG-DPG	North Atlantic-Arctic Gateways DPG (disbanded)
NARM-DPG	North Atlantic Rifted Margins DPG (disbanded)
OD-WG	Offset Drilling WG
SL-WG	Sea-Level WG

FY93 Programs:

NAAG-I	North Atlantic Arctic Gateways, first leg (Leg 151)
NARM non-volcanic-I	North Atlantic Rifted Margins non-volcanic, first leg (Leg 149)
NARM volcanic-I	North Atlantic Rifted Margins volcanic, first leg (Leg 152)
NJ/MAT	New Jersey / Middle Atlantic Transect (Leg 150)
504B	(deepening) Hole 504B (Leg 148)

FY92 Programs:

A&G	Atolls and Guyots (legs 143/144)
CA	Cascadia margin (Leg 146)
CTJ	Chile Triple Junction (Leg 141)
EPR	East Pacific Rise (Leg 142)
HD	Hess Deep (Leg 147)
NPT	North Pacific Transect (Leg 145)
504B	(deepening) Hole 504B (Leg 140)

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SUMMARY OF EXCOM ACTIONS

- The JOIDES Office should complete the current circuit of US institutions by moving to the University of Washington for FY93-94.
  Subsequently, the JOIDES Office will alternate between international and US locations.
  There are two current international expressions of interest (from Canada and UK).

FY93-94	US (University of Washington, Seattle)
FY95-96	non-US
FY97-98	US (bid/rotation)
FY99-00	non-US
FY01-02	US

(p. 13)

- ODP-TAMU will retain responsibility for curation and repositories through 1993-1998.
  ODP-TAMU should recommend to JOI, Inc. least cost procedures/policy for expanding facilities.
  - The first priority was to curate cores from upcoming legs.
  - Proposals from interested partners should be sought.

  (ODP-TAMU is to survey users to determine views regarding multiple repositories and present the results to PCOM.) (p. 16)

- JOI, Inc. tender routine at-sea logging and basic analysis/quality control as per current SOW for international competitive offerings, the new contract to commence in October 1993.
  (JOI, Inc. to request specified options for enhancements to the basic SOW as part of tender.) (p.22)

- PCOM (with panels) consider science and science support functions to be performed over a digital data network and obtain implementation advice from ODP-TAMU, ODP-LDGO and other partners. (p. 23)

- JOI, Inc. should seek formal expressions of interest in providing/operating an ODP data management system to include an integrated shipboard computing environment and shipboard and shorebased data analysis, archiving and publication. (p. 23)

- PCOM, with input from DMP, should determine the need for, and type of, additional routine downhole measurements to be supported from commingled funds.
  BCOM should review the costs of any additional measurements, assess offsets and recommend program changes to EXCOM.
  Subject to EXCOM recommendation, JOI, Inc. should tender for and implement appropriate subcontract. (p. 24)

- DMP to recommend procedures for implementing a rigorous borehole development group;Advisory Structure Review Committee to consider technology/engineering needs.
  [Note: consensus] (p. 25)

- ODPC to discuss procedures for enhancing international employment opportunities at ODP-TAMU, particularly staff scientists (3 out of 7) and marine technicians (10 out of 25). (p. 26)

- JOI, Inc and subcontractors should encourage international tenders in order to encourage more international sourcing. (p. 26)

- PCOM should establish requirements and opportunities for use of alternative, additional and support platforms.
  The advisory structure should assess technical and engineering suitability of such platforms to meet scientific objectives.
  ODP-TAMU or JOI, Inc. as appropriate to contract such platforms. (p. 26)

- An ODP Advisory Structure Review Committee should be established with the following terms of reference.
  1. The committee will review and evaluate the current science and technology advisory structure of the Ocean Drilling Program. It will review the terms of reference and assess the effectiveness of the overall structure and the value of each of the existing bodies. Specific attention will be given to PCOM and its panels, committees, Detailed Planning Groups and Working Groups and the overall COSOD process.
  2. The committee may recommend changes, not limited to strengthening of groups or deletion of groups, but will provide justification for its recommendations for change.
  3. The committee is requested to take into account the discussions and suggestions of recent review groups, including the EXCOM *ad hoc* Committee on Long-Term Organization and Management of ODP, Performance Evaluation Committee III and the EXCOM *ad hoc* Subcontracting Committee. Input from JOIDES EXCOM members should be solicited.
  4. The committee will focus on the potential effectiveness of the science and technology advisory structures for the time period 1993-1998.
  5. The committee membership will be eight, four from the U.S. and four from non-U.S. partner countries. Members will be experts in fields of science, technology and management. A liaison with the JOIDES Office will be appointed to the committee. The committee will be appointed by the Chair of EXCOM in consultation with the Chair of PCOM and the President of JOI, Inc.
  6. The committee will carry out its work during 1992 and early 1993 and will report its findings and recommendations to EXCOM in June 1993. (p. 27)

- EXCOM agreed not to proceed at present with internationalization of JOI, Inc. *[Note: consensus.]* (p. 37)

- EXCOM approves the minutes of the 14-15 January 1992 meeting of EXCOM in Bonn, Germany, with modification as noted. (p. 46)

- EXCOM endorses the FY93-FY96 Program Plan with the FY93 Program Plan as modified by PCOM at its April 1992 meeting. *[Note: consensus.]* (p. 47)

- ODP-TAMUwill remain Science Operator, with *JOIDES Resolution* as the primary platform, through the first phase of renewal. (p. 50)

- ODP-TAMU as Science Operator to integrate all shipboard computer operations and further to implement upgrades, as per IHP/PCOM tasking, via international competition. (p. 51)

- Given the general satisfaction with its services and current heavy reliance upon experienced staff and hard copy holdings, EXCOM concludes that the Site Survey Data Bank contract should not be competed now. As the second phase of the renewal period approaches, this conclusion should be revisited. (p. 52)

- EXCOM approves the nomination by Canada of W. Collins as JOIDES Office Executive Assistant and non-US Liaison. (p. 56)

- JOI, Inc. should formulate a plan to increase the number of international members of JOIDES and report to EXCOM prior to its implementation. (p. 57)

JOIDES EXCOM
Monday, 15 June 1992

EXCOM Session: Past and Future Actions on the Briden Report

528. Initial Business

Opening Remarks

Maxwell brought the meeting to order at 9:05 AM. He welcomed attendees to Washington, D.C. and called for introductions around the table. Maxwell explained that the first day of the meeting would be concerned with the Briden Report (EXCOM *ad hoc* Committee on Long-Term Organization and Management of ODP), commissioned at the July 1991 EXCOM meeting and presented at the January 1992 EXCOM meeting. This special EXCOM session was being held in advance of the joint EXCOM/ODPC meeting in order to review the Briden recommendations. It was hoped that some conclusions would be reached before the joint meeting. The Briden Report had lead to EXCOM actions, including establishment of the EXCOM *ad hoc* Subcontracting Committee (Dorman Committee) comprising Dorman (chair), Dürbaum and Falvey.

Comment on activities of the Dorman Committee had been received from PCOM (letter from B. Lewis, M. Langseth and J. Malpas to J. Austin, Agenda Book, white pages 161-162). Maxwell had replied to Lewis (Appendix 5) assuring him that EXCOM would inform PCOM and other panels of appropriate decisions and keep them involved.

Adoption of Agenda

Agenda for the 15 June 1992 EXCOM session was adopted without modification by acclamation.

529. Past and Future Actions on the Briden Report

Relation of ODP to International Science

Maxwell explained that EXCOM had given its approval in January 1992 and asked PCOM to explore options for regular, open conferences, i.e., Briden recommendation (i). (Recommendations of the Briden Report are included as Appendix 1.)

Austin reported that PCOM had concluded that feedback to the JOIDES advisory structure would require special meetings, not meetings attached to existing conferences. PCOM, therefore, requested that EXCOM provide funding to hold a COSOD-type meeting in late 1993 or early 1994. Maxwell noted that EXCOM had discussed holding several thematic meetings, each relating to a different ODP theme and held at different locations. He hoped that PCOM would pursue this and report back to EXCOM with budget requirements. Austin replied that regional and thematic meetings were being organized (e.g., the Indian Ocean synthesis meeting) and that there were various funding mechanisms. Furthermore, PCOM was not configured to assess budgets, though PCOM could discuss that issue. The main problem was that of ensuring feedback from such meetings to the advisory structure.

Heinrichs felt that PCOM might have responded to a different question from that originally asked by EXCOM. EXCOM was more interested in integration of results than a new planning document. Helsley agreed, adding that conferences more frequent than COSODs were required to communicate results to a broad scientific community. Austin replied that PCOM had not

wanted a COSOD *per se*, but felt that there was no appropriate existing meeting where the right people would be present without invitation. In particular, PCOM had felt that IUGG was not an appropriate venue. Boillot stated that France did not consider another COSOD appropriate. It was important to focus on current legs, to maintain current levels of presentation of results, and add something new in the form of regular meetings. Austin reemphasized that ODP was holding meetings, e.g., the Indian Ocean synthesis meeting and an upcoming Pacific Ocean synthesis meeting. In response to a question from Helsley, Austin stated that these meetings involved 50-75 participants. Maxwell asked about feedback and Austin reported that publication of results of the Indian Ocean meeting was due later in 1992. The publication would be a retrospective, not a planning document.

Maxwell noted that meetings were being held and that it was PCOM's feeling that a COSOD-type meeting would be needed if a planning document was desired. PCOM would recommend such a meeting if the need arose. Briden, however, felt that issues had become mixed. The Indian Ocean synthesis meeting had been vital and filled a gap. There had been a lack of thematic volumes. The problem was that such meetings involved only those scientists who were already active in ODP. Briden explained that it had been his intention, however, to raise the scientific profile of ODP in the geoscientific world. The Indian and Pacific ocean synthesis meetings would not do that, neither would COSODs. He felt that coupling this issue to feedback to the advisory structure in his original recommendation may have been a mistake. He had not been thinking of formal feedback, just of spreading the word about ODP. Austin recalled with concern that previous dedicated ODP sessions at AGU had generated small audiences. Briden responded that there had been ODP sessions at recent meetings and that times might have changed. The idea was to raise the profile of ODP. Feedback need not be formal, and attaching such sessions to existing meetings would save money.

Heinrichs stated that one recommendation of NSF's review of ODP was that there be a strategic plan for raising both scientific and public awareness of ODP. Baker identified three audiences: 1) scientists already involved in ODP, who were already being reached effectively; 2) the broader geosciences community (Baker agreed with Austin that this group would not attend special ODP sessions if the science was not exciting—the technique alone was insufficient to draw them); and 3) the public. He added that the issue of improved public relations (PR) had been raised repeatedly by JOI, Inc., PCOM and EXCOM. A PR plan could be devised, but would cost money. It was important to focus effort where there were gaps. Duce reported that ODP had made contact with the Smithsonian Institution about an ODP exhibit and that such a display existed at Epcot Center in Orlando, Florida. Rabinowitz added that ODP had been in touch with most major museums. Maxwell stressed the importance of such activity outside the US in order to reach a broader audience. Dürbaum felt that journalists would pick up stories if results were interesting enough. There was no need to hire anybody. Maxwell proposed that JOI, Inc., together with the international partners, should create an initiative. Helsley pointed out that EXCOM's emphasis had been on international meetings. Perhaps EXCOM had given PCOM the wrong instructions. He hoped that PCOM would consider some of the broader issues discussed at the January 1992 EXCOM meeting (Agenda Book, white pages 10-11). A large forum was needed. Austin noted that six speakers showcasing ODP would be attending IGC in Kyoto, summer 1992. (JOIDES had been approached by the Japanese to provide speakers.) Any initiative would cost money. He stressed the importance of an EXCOM statement in support of a commitment to find suitable funds. Baker characterized the IGC initiative as a perfect example that the system was working.

Maxwell felt that PCOM understood EXCOM's request and that EXCOM could move on to recommendation (ii) regarding bilateral liaisons. Austin explained that, as a result primarily of work by Pyle, a number of liaisons between ODP and other international scientific programs existed (Agenda Book, yellow pages 6-7). A large part of each August PCOM meeting was devoted to hearing reports of liaisons from those groups. PCOM would like input on other

programs which EXCOM felt that PCOM might have missed. Maxwell stated that this matter was proceeding and that EXCOM should not spend further time on it.

Maxwell recalled that discussion of recommendation (iii), concerning changing the name of ODP to International ODP, had been deferred at the January 1992 EXCOM meeting. Baker stated that the view seemed to be that the name of ODP should only be changed if there was a major change in the program. There were some advantages for funding agencies in maintaining continuity of the name. It also took time for people to become familiar with a new name. Heinrichs agreed, noting that some people thought DSDP was still in existence. Maxwell stated that ODP's name could be changed later, if warranted.

GOVERNANCE OF PROGRAM

Baker explained that internationalization of JOI, Inc. [Briden recommendation (iv)] was legally possible and that there were no practical problems either. It was largely a question of rules. He asked, however, whether it was necessary. Did any of the international partners want to be on JOI-BOG and assume associated responsibilities? Internationalization of JOI, Inc. could be considered if it was rendered necessary for the running of ODP by changes to the program, but the decision should be driven by needs.

Dürbaum asked how liability was organized in the US. Baker replied that the US Government assumed liability. Heinrichs added that the US Government will indemnify ODP in the event of a major mishap. ODP was, however, required to have considerable insurance. Rosendahl pointed out that there was some institutional liability. Heinrichs agreed that the government indemnity was for a major disaster, but that there were other liabilities. Rosendahl explained that institutions were not insured, but that their directors were. Baker agreed that this was a gray area and that there may be some institutional liability.

Maxwell asked whether there were any positive advantages for non-US members of JOI, Inc. He noted that EXCOM made all decisions, though JOI-BOG had the legal responsibility to agree with and endorse those decisions. At present, international partner representatives were welcome to attend JOI-BOG meetings when JOIDES matters were under discussion (JOI-BOG also discussed purely US issues).

Briden stated that his view was that internationalization of JOI, Inc. should proceed if it was felt to be needed by the members, not only if it was needed by the program. He asked whether ODP was a program with one big member and a number of small members. He felt that the issue could be decided at the ODPC meeting. It was complex, because JOI, Inc. dealt with some purely US issues. The heart of the matter was liability. The international partners needed to look at advantages and disadvantages and decide whether or not being members of JOI, Inc. was worth it. The UK would have to think hard before committing itself. If the international partners decided against joining JOI, Inc., they would have to acknowledge that the present situation was acceptable. International partners should declare one way or the other at this meeting. Maxwell agreed, adding that ODPC was the right forum for discussion. Heinrichs was also in agreement. He felt that the issue should be brought up at the joint EXCOM/ODPC meeting for broad discussion. Formal JOI, Inc. representation was also required. Helsley asked that Baker provide the formal wording on responsibilities of members of JOI, Inc. before the discussion.

Westgaard felt that the issue of responsibility was a formidable problem. ESF had 12 member countries. The ESF body was reluctant to take on the responsibility. The ESF Management Committee was happy to make ODP more international, but efficiency of ODP was the most important issue. Heinrichs proposed making internationalization of JOI, Inc. an agenda item for the joint EXCOM/ODPC meeting the following day. Maxwell agreed.

Maxwell noted that EXCOM had asked JOI, Inc. to look into Briden's recommendation (v) concerning internationalization of the JOIDES Office. Expressions of interest in hosting the JOIDES Office had been received from two partners. Baker stated that, after receiving EXCOM's charge, Pyle had surveyed current and past JOIDES Office operations. EXCOM should also discuss how decisions on JOIDES Office location would be made.

Pyle reported on the results of the survey. Consensus was that internationalization of the JOIDES Office was feasible and desirable. Concerns were expressed about cost, communications and language (editing *JOIDES Journal*, meeting minutes), but a bidding process could respond to those. It was felt that US representatives should be appointed and that PCOM and EXCOM chairs should continue to be located in a single institution. Pyle proposed that the JOIDES Office should complete the current circuit of US institutions by moving to the University of Washington for FY93-94 and that the JOIDES Office should then alternate between international and US locations.

Baker noted that location of the JOIDES Office had always been decided two years in advance. If that strategy was to be continued, it would be necessary to decide on the FY95-96 JOIDES Office location by September/October 1992. Maxwell stated that there were apparently no insurmountable problems and that EXCOM should consider internationalization of the JOIDES Office. EXCOM must determine a mechanism by which locations would be selected. The final decision could be made at the January 1993 EXCOM meeting in Australia, but that would mean providing <2 years notice. Helsley stated that, from the US point of view, rotation of the JOIDES Office was preferred to bidding and that international partners might also prefer rotation. Baker explained that the best way to proceed might be to seek expressions of interest. A review group should now be established and guidelines for examining JOIDES Office proposals formulated. Heinrichs noted that there would only be 4-5 more JOIDES Offices under the present ODP (up to FY03) and, therefore, encouraged a bidding process. Baker agreed. In response to a question from Maxwell, Heinrichs said that a bidding process could mean that the JOIDES Office need not alternate between US and non-US locations, but could, for instance, go overseas for the whole period up to FY03, though that would complicate the work of NSF. Baker added that now was the time for interested countries to prepare and submit proposals to host the JOIDES Office. Guidelines would be prepared and a review group set up. EXCOM should agree as a consensus that the JOIDES Office could move overseas. Maxwell added that EXCOM should agree on ground rules for bidding, with the final decision to be made in January 1993.

Riddihough asked whether internationalization of the JOIDES Office was a symbolic act in the interest of fairness or whether it would improve ODP. The profile of ODP would be raised within the host country, but what of ODP as a whole? Briden replied that the philosophy was that ODP was international and should be made as international as possible. Baker stated that the JOIDES Office should be in an academic institution. A benefit of moving it outside the US was that it would involve more people in ODP. In addition, a bidding process might result in cheaper operation of the JOIDES Office.

Maxwell asked whether there was general agreement that a group should be set up to establish ground rules, to be considered at the EXCOM executive session later in the week. Baker added that a committee to review bids should also be appointed. Heinrichs stressed the importance of deciding on the rotation scheme (alternation between US and non-US, or otherwise). Eaton moved that EXCOM endorse Pyle's alternating US/non-US scenario. Dorman felt that there was no reason to drag the JOIDES Office back to the US every other two years. Baker suggested that EXCOM decide now only on the first international move of the JOIDES Office and then decide on future rotations at subsequent meetings. Helsley agreed. Maxwell,

however, noted that the motion being discussed locked in a sequence. EXCOM finally passed the following motion.

EXCOM Motion

The JOIDES Office should complete the current circuit of US institutions by moving to the University of Washington for FY93-94.
Subsequently, the JOIDES Office will alternate between international and US locations.
There are two current international expressions of interest (from Canada and UK).

FY93-94	**US (University of Washington, Seattle)**
FY95-96	**non-US**
FY97-98	**US (bid/rotation)**
FY99-00	**non-US**
FY01-02	**US**

Motion Eaton, second Rosendahl Vote: for 12; against 4; abstain 1; absent 0

Maxwell noted that EXCOM could always revisit this issue. Eaton asked whether the procedure for selection would differ for US and non-US locations. Maxwell nominated a subcommittee comprising Austin (chair), Malfait, Nowell, Pyle and Westgaard to meet and report to EXCOM before the end of the current meeting. The subcommittee would determine items that should be included in any JOIDES Office proposal. A later, separate group would evaluate those proposals. Heinrichs added that the subcommittee could choose the second proposal review group. In response to a question from Austin, it was the consensus of EXCOM that the subcommittee should consider only the first move to a non-US location and not a subsequent return to the US.

ROLE OF SUBCONTRACTORS, TENDERING FOR SUBCONTRACTS, INCORPORATION OF NEW VESSELS

Maxwell explained that a subcommittee comprising Dorman (Chair), Dürbaum and Falvey (Dorman Subcommittee) had been established at the January 1992 EXCOM meeting in Bonn to consider these issues. The Dorman Subcommittee report was included in the Agenda Book (white pages 129-152) and is included as Appendix 2.

Dorman circulated a handout summarizing recommendations of his subcommittee. The charge had been to recommend to EXCOM (and via EXCOM to JOI, Inc.) specific contracting options to achieve continued ODP excellence and demonstrated cost effectiveness with enhanced international participation during the ODP renewal period (1993-2003), i.e., what should be tendered for bid? to which offerers? how? when? and how evaluated? (Caveat: NSF intends sole-source prime contract to JOI, Inc. for 1993-1998.) Dorman thanked Dürbaum and Falvey for their work.

Dorman outlined procedures. Expressions of interest had been requested. These were not RFPs. Dorman noted that there had been some misunderstanding among PCOM members in that regard. He apologized to ESF, which had received the request late because Westgaard had been in the process of moving to Europe. The subcommittee had then reviewed responses and visited ODP-LDGO, JOI, Inc. and ODP-TAMU. Dorman thanked them for their assistance. A draft report had been written, followed by visits to France and Russia. Dorman thanked their hosts and T. Pettigrew of ODP-TAMU, who had been present on the visits. The subcommittee report had been circulated and was now presented to EXCOM.

Dorman listed the guidelines under which the subcommittee operated.

1) ODP science driven (a fundamental concept; PCOM guidance desired).
2) Concentration on the period 1993-1998. See 8) below.
3) No new money, so additions would require hard choices (i.e., "zero-sum game").
   Rosendahl noted that EXCOM had not specified the last condition, adding that it seemed to him that adopting that philosophy would guarantee that no new money would be found. Dorman replied that the assumption of no new money seemed appropriate to the subcommittee in the light of budget projections on which renewal was based, which EXCOM had heard from NSF and international partners. Heinrichs explained that renewal involved only a modest increase (7% in international partner contributions). Major changes would require more action. Rosendahl agreed for the period through 1995, but not for the period through 1998. Briden agreed with the subcommittee's procedure, adding that the assumption of no increase in funding was the safe thing to do. Maxwell commented that big increases could still happen.
4) The system worked well and the contractual burden should be minimized (i.e., not too many subcontracts).
5) Identify activities that could be competed for international participation.
6) Make a serious effort at internationalization.
7) Explore possibilities (not RFPs).
8) New contracts commence ~October 1993.

Dorman stated the subcommittee's findings.

1) There was no need to compete the Site Survey Data Bank for the time being. It should remain at LDGO for now. SSP and PPSP were satisfied with the current operation and the large volume of analog data would be difficult to move.
2) ODP-TAMU should be retained as Science Operator, with *JOIDES Resolution* as drillship for the first phase (1993-1998), because of both the quality of the current operation and lack of alternatives proposed for 1993-1998.
3) Weaknesses in engineering. The subcommittee was not criticizing day-to-day performance, but noted that there were many excellent ideas which the system was not currently well-suited to evaluate and implement. The subcommittee had two principal concerns: (i) there was no statement in the ODP-LDGO subcontract to cover development of third-party tools and a rigorous approach was needed, and (ii) ODP was not taking optimum advantage of many new techniques (logging, drilling and new platforms). Dorman explained that it was not the subcommittee's intention to make ODP an engineering development program, but that ODP should take advantage of new ideas.
4) Computing environment needed to be upgraded (shipboard and shore-based). IHP and DH-WG had already made recommendations in this area. Issues involved core-log integration, communications and dissemination. Dorman stressed that computing and data management up to publication of Initial Reports volumes remained tightly linked and should be competed, but not split.
5) Significant interest had been expressed in downhole measurements operation. Problems were money and lack of adequate development environment for new tools.
6) There had been international interest in increased general participation (analysis, services, contractual and staffing). Current levels were minimal.
7) There were many opportunities for international participation, with potential competition at renewal time for repositories, logging, analysis and computing, and also increased participation in engineering, new techniques, staffing, services and supplies.

Recommendations

a) Repositories

The subcommittee had found that curation was being done effectively, but that there was a lack of space in existing repositories. Now that the drillship was moving to the Atlantic, international participation could be sought. Alternatively, the amount of space in the Atlantic repository at ODP-LDGO could be discussed. The subcommittee's charge, however, had been to explore internationalization. The subcommittee felt that overall responsibility for curation and repositories should remain with ODP-TAMU during 1993-1998. Therefore, ODP-TAMU should recommend to JOI, Inc. the least cost procedures/policy for expanding facilities. First priority was to curate cores from upcoming legs. Proposals from interested partners should be sought.

Baker stated that it was his impression that scientists would rather have fewer repositories. Austin replied that PCOM had received no formal input on that. Dorman noted that there was time pressure and fast action was required. Even if the ODP-LDGO option was chosen, a decision would be needed by January. More time was available to decide on Pacific repositories. Briden asked whether ODP-TAMU was on track to make recommendations to JOI, Inc. Rabinowitz confirmed that it was, when EXCOM gave instructions on what to proceed on. Dürbaum noted that money was also a problem. Maxwell agreed, pointing out that funds would either have to come out of the existing budget or some member would have to use their own funds. Dorman added that it had been the hope of the subcommittee that those interested in repositories would be stimulated to pay some of the costs. In response to a question from Maxwell, Dorman said that the subcommittee had received expressions of interest in repositories.

Eaton stated that LDGO was prepared to spend its own funds to create additional space, but not until it knew definitely that it would have a repository. If it was not to be given a repository, LDGO might not want the existing cores. Leinen felt that PCOM (scientific) input was needed on the issue of splitting cores from a single ocean between repositories. Duce stated that ODP-TAMU could expand its repository and could bring all cores from ODP-LDGO to ODP-TAMU. However, it would be necessary to consider costs. TAMU could pay for expansion of its repository, but would need help to take all of the cores (estimated cost ~$13-14M). Baker recalled that the issue of repositories had been discussed at the beginning of ODP and EXCOM had felt that there should be a minimum number of repositories. PCOM guidance on what users wanted was needed. Austin replied that PCOM could discuss that. The system was working well as a single sampling system run by ODP-TAMU. Maxwell noted that the cost of options was critical. Dorman pointed out that keeping costs low was one advantage of competition.

Eaton raised the issue of where most scientists resided. Rabinowitz commented that most sample requests were mail requests. Austin felt that most visitors to repositories were US scientists. Duce stressed that timing was critical because the ODP-TAMU repository would be full in 1995. Eaton advocated deciding at this meeting whether to have additional repositories or just those existing. Austin added that the first Atlantic cores would begin arriving in spring 1993. Dorman pointed out that there was some temporary core storage space. Heinrichs felt that the key issue was whether ODP-TAMU should make recommendations to JOI, Inc. and what guidance ODP-TAMU would need. Going to PCOM might take too long. Baker felt that some input from users was essential. He felt that the community wanted few repositories. Austin cautioned that PCOM could not provide the necessary input alone. He suggested polling past shipboard scientists, though that would take time. Dorman stated that the current curator had the best access to the preferences of the user base.

Eaton stressed that LDGO did not wish to spend money on expansion and then lose its repository. LDGO needed a long-term decision. Dürbaum noted that there were several good proposals for repositories. Institutions should provide costs and proposals to ODP-TAMU, then JOI, Inc. could report to PCOM. Dorman stressed that this recommendation had been driven by timing. Based on discussions, ODP-TAMU could solicit international interest and explore options with ODP-LDGO. There was time to do that before December 1992. Briden wondered whether bidders would be able to provide firm bids within that timeframe. In response to a question from Moss, Dorman said that both US and non-US institutions would be eligible to bid. Dorman added that ODP-TAMU had already held discussions with people in Europe and at ODP-LDGO. ODP-TAMU could put out a formal request for cost, size, etc., and get responses by the beginning of September 1992. ODP-TAMU could simultaneously sample the user base, share that information with PCOM in August and make a recommendation to JOI, Inc. by 15 September. Under discussion was one new repository in Europe. Heinrichs said that it should be made clear to bidders that PCOM might recommend maintaining only the existing three repositories and that, therefore, the efforts of bidders might be wasted. Eaton added that bidders with an interest in taking on the role of East Coast Repository should know that it would also involve existing cores. He raised the issue of the need to refrigerate cores for 10 years. PEC III had questioned its value. Cores underwent changes even while refrigerated. In addition, there was less interest in older cores. Refrigeration was primarily for the benefit of physical properties and organic geochemistry studies. Eaton suggested that researchers in those fields be asked to carry out their measurements within 5 years. The money saved by not refrigerating cores beyond five years could then go elsewhere. Heinrichs stated that that had been under discussion for some time. The key issue for global change studies was humidity control rather than temperature control. Eaton had raised a valid question. Austin added that PCOM had also discussed the issue. The question concerned the greatest good for the greatest number of scientists. A few scientists strongly supported refrigeration, but most did not care. It would be necessary to be specific about cost savings and redirection of funds to science. Duce disagreed with Eaton's proposal, noting that measurement techniques improved with time.

Maxwell proposed that EXCOM follow the subcommittee proposals and have ODP-TAMU report to JOI, Inc. on options, including the cost of refrigeration, so that cost trade-offs could be evaluated. Dürbaum stated that EXCOM members should alert interested institutions to be prepared to submit proposals. Rabinowitz explained that cores older than 5 years were sampled (e.g., DSDP Leg 1 cores were still being sampled). Long-term running costs of refrigeration were only ~$15,000/yr, once initial investment had been made. Maxwell stated that ODP-TAMU should still proceed with requests for input, including cost of refrigeration. Bogdanov felt that it was only necessary to refrigerate some cores. Austin, however, noted that only a small proportion of cores (basalt) required no refrigeration. Helsley supported the proposal that EXCOM should recommend that ODP-TAMU solicit EXCOM membership for interest, including cost input, and interact with PCOM. Austin doubted that that could be done by the August 1992 PCOM meeting. Dorman proposed that ODP-TAMU should just survey users and interact with PCOM. Briden agreed with the Dorman Subcommittee recommendation. Dorman noted that it should a matter of record that one of the substantive recommendations of the subcommittee was that ODP-TAMU retain responsibility for curation and repositories throughout the renewal period (Agenda Book, white page 135). Eaton felt that it was too late to make a decision, with the drillship due in the Atlantic in March 1993 and the first cores arriving in June 1993. Action should have been taken sooner. EXCOM passed the following motion.

<u>EXCOM Motion</u>

ODP-TAMU will retain responsibility for curation and repositories through 1993-1998. ODP-TAMU should recommend to JOI, Inc. least cost procedures/policy for expanding facilities.

- **The first priority was to curate cores from upcoming legs.**
- **Proposals from interested partners should be sought.**

Vote: for 15; against 1; abstain 1; absent 0

(ODP-TAMU is to survey users to determine views regarding multiple repositories and present the results to PCOM.)

b) Standard at-sea logging

Dorman explained that the subcommittee had recommended separating elements of the Wireline Logging operation. He added that ODP-LDGO deserved credit for the DataNet concept and for generating international interest in it.

Dorman noted that other offerers had expressed interest in standard at-sea logging. Eaton stressed that ODP-LDGO was interested in continuing with standard at-sea logging, though R. Anderson no longer wished to be involved. D. Goldberg was the interim replacement. Dorman stated that the subcommittee felt that it was important for continuity that the at-sea logging operator be identified early.

The subcommittee recommended that JOI, Inc. offer for international competition amongst ODP partners all at-sea wireline logging operations management, including specified standard tools, special-purpose research tools, on-board data quality control and preliminary log analysis. JOI, Inc. should also establish an international tender board to evaluate bids.

c) Wireline log analysis

It was important to be definitive about what the package was to be. PCOM must be more definitive (it had approved DataNet in concept).

PCOM (with definitive input from DMP and IHP) should recommend the future type, amount and timeliness of routine log analysis. Subsequently, JOI, Inc. (with input from PCOM and BCOM) should ask for international competitive offerings and establish an international tender board to evaluate offerings.

Dorman noted that computing, data link (communications) and engineering were not involved in this offering, but were separate. Routine logging and log analysis were related and could be combined. It was essential to identify explicitly routine logging and type of analysis. In response to a question from Briden, Dorman said that the successful bidder would be responsible for running additional tools, but not for tool development. Austin explained that, if EXCOM endorsed the subcommittee's recommendation, PCOM would discuss it and instruct IHP and DMP. EXCOM would hear results in January, which might be significant if time was a factor. Pyle noted that that would leave only 8 months (i.e., January to October 1993) to bid a difficult task.

Briden, noting that the subcommittee seemed to recommend combining standard at-sea logging with wireline log analysis in a single contract, asked whether that was necessary. PCOM could provide necessary information on standard at-sea logging immediately, only consideration of future log analysis would require a delay. Dürbaum replied that a review was needed. Changes might then be made. Therefore, the items needed to be discussed together, perhaps also including data handling.

In response to a question from Helsley, Dorman said that the subcommittee anticipated a team approach to standard at-sea logging and wireline log analysis. The subcommittee had felt that it was preferable to combine these operations, but they could be separated. Dürbaum suggested that the PCOM Chair (Austin) inform DMP and IHP before August. Austin, however, pointed

out that DMP and IHP would not, in any case, meet until the fall. Maxwell noted that there were timing implications. He asked whether the subcommittee felt that EXCOM should decide the issue at its January 1993 meeting. Dorman replied that PCOM could put together the specifications for both standard at-sea logging and wireline log analysis and pass them straight to JOI, Inc. after the December 1993 PCOM meeting. There would be no need to return to EXCOM. Austin pointed out, however, that BCOM would not meet until after the January 1993 EXCOM meeting. Eaton urged that EXCOM make immediate decisions. ODP-LDGO was staffed at a level of 75% and could not hire additional personnel without a promise of continuity. Dürbaum stated that a well-prepared set of international proposals existed and that this was a critical step. Dorman agreed that the PCOM/DMP/IHP step was essential. He stressed that multiple expressions of interest had been received and that the subcommittee believed that competition was appropriate. Baker suggested asking DMP and IHP to meet before the August PCOM meeting. Austin replied that DMP and IHP would meet in September. It would be difficult for them to meet earlier, but he could ask if EXCOM wished.

Briden agreed with Eaton that it would reflect badly on EXCOM if everything could not be accomplished by October 1993. Corners could be cut. For instance, there was no need to go to BCOM, since it was a "zero-sum" budget. There was also no need to return the issue to EXCOM. A subcontract was under consideration and that should be in the hands of the prime contractor. It should, therefore, be possible to go straight to RFPs after the December PCOM meeting. He asked whether that could be done, whether it would be soon enough and, if not, whether it could be brought forward. Austin said that IHP and DMP recommendations could be sought by mail, though he was reluctant to do that because of the tendency then to get only a partial response. Alternatively, EXCOM could take IHP and DMP recommendations directly. Pyle stated that RFPs would go out in late January, at the same time as the Program Plan. It could not be done quicker. Time would be short. Rabinowitz remarked that the drillship RFPs and bids had been handled in less time. Dorman noted that ODP-LDGO had put forward a strong international team. Baker felt that if there were to be competing proposals, a process of the type recommended by the subcommittee would have to be followed. That would also benefit ODP-LDGO, if it had pulled together a good team.

Maxwell wondered whether the October 1993 starting date for new subcontracts was too soon. It might be delayed until 1 January 1994. Timing would be a problem with all items. It was important to set up groundrules that enabled an effective approach, even if the existing subcontract had to be extended. Austin cautioned against allowing the present operation to decay during the transition. Dorman felt that that was unavoidable. Eaton agreed and added that if ODP-LDGO was not awarded the new subcontract, there would be a decline. Briden noted that he had originally suggested in his report that it would not be possible to compete subcontracts until 1995. He had subsequently been persuaded that the logging operation could be competed by 1993.

Goldberg felt that it was unnecessary to provide a new program when all of the issues raised by the subcommittee were addressed by the existing DataNet proposal. Eaton agreed that that was an alternative. He asked whether any proposal superior to the ODP-LDGO proposal had been submitted. At the moment there was nothing to discuss. Rabinowitz emphasized that the DataNet part of the ODP-LDGO proposal was not part of the package under discussion. Dorman stressed that scientific analysis should remain as science and only routine analysis was to be subcontracted.

Dürbaum proposed moving on to the next two recommendations, which were somewhat interconnected. EXCOM could then return to the outstanding issues. Maxwell noted that EXCOM was going over these items so as to have a position to discuss at the joint EXCOM/ODPC meeting the following day. There might be some changes at that stage, which EXCOM could clear up at its executive session following the joint meeting.

Goldberg stated that log data required basic analysis and that separated it from core data. He asked what IHP and DMP were likely to recommend that would differ from the present basic package of logs and analyses. The statement of work essentially existed already and IHP and DMP recommended and monitored basic analyses. Helsley felt that EXCOM was trying to combine an ongoing activity (standard at-sea logging) with something in the future that was as yet undefined (wireline log analysis). Log analysis needed to be fully defined and he preferred treating the two items separately. Heinrichs disagreed.

d) Computing and data management network

EXCOM went on to consider related Dorman Subcommittee recommendations. Dorman explained that DH-WG was looking into shipboard computing. At present, there were two sets of computers: one for logging and one for all other requirements. The subcommittee proposed that this all be done under a single subcontract. In addition, if there was to be a data network, it should cover all data and not just logging data. Initial Reports data should be mostly in digital form.

The subcommittee recommended that JOI, Inc. seek formal expressions of interest in providing/operating an ODP data management system to include an integrated shipboard computing environment and shipboard and shorebased data analysis, archiving and publication. Subject to responses, JOI, Inc. should determine whether tendering was appropriate and whether such a contract should be managed directly by JOI, Inc. or by the Science Operator.

Three models were considered.
Alternative A. ODP-TAMU to retain computer operations and data management as part of Science Operator contract. Wireline logging computers and systems upgrades would be added. ODP-TAMU would be required to complete such upgrades.
Alternative B. Compete onboard computing (including wireline logging computers) and data management services only.
Alternative C. Primary, alternative A or alternative B, with additional responsibility of developing a dedicated shorebased ODP data network to improve access to digital data (DataNet-type concept).

Austin stated that several alternatives were discussed by DH-WG. If ODP-TAMU was to be retained as Science Operator with *JOIDES Resolution* as drillship through 1998, both DH-WG and PCOM felt that ODP-TAMU must retain computer operations and data management. Those operations could not be separated. Dorman pointed out, however, that once again expressions of interest had been received and it was necessary to consider the whole package from acquisition to publication. Duce said that ODP-TAMU felt that computing was an integral part of science operations, but ODP-TAMU was also ready to compete. Austin informed EXCOM that a subgroup of DH-WG was considering the issues. Dorman felt that PCOM was ahead of EXCOM on this matter. He stressed the subcommittee's recommendation that there not be a separate computer system for logging. Austin agreed, but noted that it would be difficult to integrate the systems because of Schlumberger. Baker felt that different systems would be acceptable as long as the data were integrated. Eaton asked whether it would be helpful for Goldberg to give a presentation on DataNet. Maxwell replied that that would be heard the following day.

Austin recalled that BCOM had considered computing items. No such items could be funded if there were only six international partners (the costs involved might be several $100,000s). Eaton stated that switching from Schlumberger US to Schlumberger France would involve cost

savings. Dorman felt that the science community, through IHP and DH-WG, recognized the importance of computing and that PCOM would, therefore, stress its importance.

Maxwell agreed that PCOM had computing in hand and would make recommendations, whether funds were available or not. He asked whether PCOM, DMP and IHP would consider recommendations b) and c) (logging and log analysis) in parallel with computing. Austin replied that EXCOM had some answers in hand. Directives could be pulled from those panels about what should constitute standard logging. There were currently three standard logging strings and that would not be changed by further discussion. The issue of third-party tools was more complex. Dorman felt, however, that the discussion should take place and form the basis of a competitive package. Log analysis should also be considered for reasons already discussed. In response to a question from Rosendahl, Dorman said that expressions of interest had been received from international partners, but that ODP-LDGO had gone further, by producing the DataNet proposal. Duce noted that ODP-LDGO had already "changed its mind" (about whether to compete for basic logging) and that others might have done so. Dorman replied that, in the event of a competition, nobody would be excluded from competing just because they did not submit an expression of interest. In all cases where an expression of interest was received from more than one party, the subcommittee had recommended competitive bids. Austin stated that PCOM should be able to transmit its recommendations to JOI, Inc. by December. Maxwell added that EXCOM must first vote on the recommendations. Dürbaum stressed that the subcommittee had felt that basic log analysis included necessary corrections, quality control and core-log integration. Briden said that timing was critical. If bids were received by March, the successful bidder would only have five months to get their operation going. Maxwell reiterated that some extra time might be necessary. Briden felt that EXCOM should set the timetable immediately. If it felt that 1 October 1993 was unfair, EXCOM should specify that when tenders were called for. Dürbaum noted that two months could be gained if PCOM had a special session in early October 1992. Eaton cautioned that ODP-LDGO could not continue to subsidize logging beyond one year.

Helsley stated that a logging program existed. EXCOM could decide here, without going to PCOM, and save four months by bidding the present logging program. Boillot supported that proposal. Helsley added that PCOM could redefine the logging program later if they wished and renegotiate. Austin said that PCOM would not mind that if it could be involved in evaluating the bids. Falvey responded that that was JOI, Inc.'s role. Baker agreed, but added that PCOM could be involved. Heinrichs stressed that PCOM members would not be able to vote on bids. Falvey agreed that they would be present as independent, competent experts. There was general agreement with Helsley's strategy. In response to a question from Helsley, Maxwell said, to general agreement, that only JOIDES members would be eligible to bid.

Briden expressed concern that this plan was effectively the *status quo*. Maxwell disagreed, noting that the proposed course of action involved rebidding the existing logging program. *Status quo* would be simply renewing the existing program. Briden also cautioned against looking at the issues piecemeal. There was a need to consider how the various elements fitted together. Baker recommended against a vote until EXCOM had considered the other recommendations. It would be unwise to have to discuss the rest having committed to one piece. EXCOM decided to move on without voting on standard logging and log analysis.

Returning to the issue of computing, Austin said that EXCOM should endorse the subcommittee's recommendations because the science advisory structure was ahead of EXCOM on that issue. Dorman asked whether computing should be competed or left with ODP-TAMU. Falvey said that the subcommittee's recommendation involved seeking expressions of interest, and was not an RFP. None of the informal expressions of interest received in January had gone far enough. Austin reiterated that PCOM had discussed the issue and supported alternative A above (ODP-TAMU to retain computer operations, etc.). The DH-

WG Steering Group was working with ODP-TAMU. Computing tasks were crucial to the Science Operator and must stay with ODP-TAMU. Falvey pointed out that adopting subcommittee recommendation d) allowed alternative A, but also other options. Baker said that JOI, Inc. had also felt that the Science Operator should retain computer operations, though that did not preclude seeking expressions of interest in improving the system. Computer operations should remain with ODP-TAMU at least until 1998. Dürbaum noted that ODP-TAMU was planning to change computing structure in any case. Austin added that there could be competition, but that ODP-TAMU should oversee it. Dorman noted that JOI, Inc. could seek expressions of interest in parallel, but it was quite possible that nothing would come of that. Austin emphasized that there would be input from the science advisory structure.

Dorman pointed out that alternative C included, as an extra, the ODP data network. PCOM had endorsed the DataNet concept, but the subcommittee suggested that the data network include all data management, not just logging data. Maxwell commented that the data network might be beyond budget limitations. Dorman agreed, but PCOM had endorsed it as a good idea and consideration should now be given to fiscal matters. ODP-TAMU could be asked to look at that and it could be included in requests for expressions of interest. IHP was being asked to consider PEC III's recommendations on publications (Scientific Results volumes) and the subcommittee had suggested that IHP also look into making Initial Reports more digital. At the same time, IHP could also be asked to look at a network for handling data. There was neither urgency nor money. Austin responded that the DH-WG Steering Group would consider ship-shore links, but not processing nodes ashore, which was where costs escalated. Dorman felt that the science advisory structure should decide what should be done. In reply to a question from Rosendahl, Austin said that the ODP-LDGO DataNet concept went beyond PCOM's charge to the DH-WG Steering Group. PCOM saw it as a phased initiative and was unable to see how to implement it in a "zero-sum" program. If a proposal to do that was submitted, PCOM would support it. Helsley proposed that EXCOM should either hear the report on the ODP-LDGO DataNet proposal or postpone further discussion until the report had been heard.

Maxwell felt that no further discussion was required, but that PCOM should report back to a future EXCOM meeting with recommendations and costs. Austin stated that PCOM would have to be charged with that task, since PCOM was not doing that at present. PCOM would need an estimate of the resources available. Maxwell replied that PCOM could provide options with various costs. Austin stressed that PCOM would have to consider what to cut in order to establish a data network. There was currently no money in the system for any of this. Heinrichs felt that the key issue was the computer data management upgrade. The data network was a longer-term objective and should be considered as a FY95 issue. It was vital, however, to define basic structure beyond FY93. It was too late to increase the FY94 budget, but it was important to maintain the vision and to try to make it happen eventually, though that need not be included in bidding FY93 subcontracts. Maxwell pointed out that EXCOM could not wait until FY95 to think about these issues because that would be too late. It was necessary to develop a plan. Eaton suggested that, even without any increase in funds, something should be cut and the data network established anyway. Austin asked what should be cut in that case. Baker noted that the high-speed ship-shore data transmission system, SeaNet, involved cooperation between institutions to cut costs. It might be possible to establish a data network within the present budget. Dorman recommended that PCOM decide, during the next year or so, which science functions were desired in the data network. ODP could not afford it yet. Briden felt it was premature to attach the data network to this particular subcontract. Falvey reiterated that the point of endorsing the primary version of recommendation d) (before addition of alternatives A, B and C) was to give flexibility. He favored the primary version.

Duce thought that the data network could be considered separately from general computer operations and data management (i.e., alternative A). Computing was an integral part of science operations and ODP-TAMU was already implementing much of alternative A.

Heinrichs agreed and hoped that EXCOM would choose alternative A. The data network could be developed separate from ODP-TAMU. Rabinowitz felt that there would have to be overlap of personnel. Maxwell said that he would like to see EXCOM endorse alternative A. EXCOM would hope that ODP-TAMU would look widely at other groups (US and international) for assistance. If that was approved, EXCOM could look at logging again and consider the data network in the longer term, referring it to PCOM. Austin felt sure that the data network would follow naturally from what was already happening. Dorman acknowledged that, but felt it important for EXCOM to issue a statement on the subject. In parallel with the work of ODP-TAMU on computing, JOI, Inc. could seek expressions of interest as in primary recommendation d). Leinen expressed concern about requesting expressions of interest in establishing a data network before PCOM had said what it should incorporate. Austin felt that the proposed course of action (alternative A) represented evolution, whereas primary recommendation d) represented revolution. It would be difficult to carry them out in parallel. Maxwell envisaged primary recommendation d) as being a long-term initiative and saw no conflict. Falvey recalled that the terms of reference of the subcommittee had involved obtaining concepts from more than one group (US and international), hence primary recommendation d). Austin felt that it might be useful to have formal expressions of interest and work them into the evolutionary process. PCOM could ask for such expressions and advertise them in *JOIDES Journal.*

Baker felt that EXCOM's recommendation on logging should include the data network. Austin argued, however, that the data network was not a "zero-sum" item. Dorman explained that the subcommittee had wanted to separate logging operations and analysis from computing and a data network because logging must continue regardless. Falvey added that it was the opinion of the subcommittee that logging could be carried out by a different group from that responsible for a data network. Briden, however, noted that those two initiatives were separated by time. He interpreted Baker's comment as meaning that, when tendering basic logging operations, bidders should be given the opportunity to mention extra activities and provide costs. Maxwell stated that bidders could include more than the minimum required services in their bids if they wished. Pyle added that EXCOM was only specifying the minimum service, but bidders could offer more. EXCOM passed the following motion.

<u>EXCOM Motion</u>

JOI, Inc. tender routine at-sea logging and basic analysis/quality control as per current SOW for international competitive offerings, the new contract to commence in October 1993.

Vote: for 14; against 2; abstain 0; absent 1

(JOI, Inc. to request specified options for enhancements to the basic SOW as part of tender.)

Baker stated that he was still uncomfortable with EXCOM specifying only the routine part of the logging program. Leinen emphasized that that was a minimum service and proponents could include additions. Dorman added that the extra elements (data network) would be included in a separate motion. Baker feared that that pushed the issue off into the future. Austin reiterated that the data network was not "zero-sum". Baker feared that the process would retard development of the data network. Dorman stressed that the fundamental logging operation must be performed. Options could, however, be added. Goldberg stated that ODP-LDGO's DataNet proposal had been revised since the January 1992 EXCOM meeting and was not on the table at present. It would be presented the following day. Dorman responded that the subcommittee had received many expressions of interest and those must also have evolved. DataNet was one of many. Baker expressed the concern that, as the motion was written, all that might be received could be a number of proposals to perform only basic logging. Dorman said that, in

that case, money would be left over for good ideas and those should come from the science advisory structure. EXCOM voted on the following motions.

EXCOM Motion

ODP-TAMU as Science Operator to manage shipboard computer operations and implement upgrades, as per IHP/PCOM tasking, via international competition.

Vote: for 11; against ;4 abstain 1; absent 1

Note: This motion did not pass because a $^2/_3$ majority was not obtained. It was passed, in modified form, on the final day of the meeting.

EXCOM Motion

PCOM (with panels) consider science and science support functions to be performed over a digital data network and obtain implementation advice from ODP-TAMU, ODP-LDGO and other partners.

Vote: for 14; against 1; abstain 1; absent 1

EXCOM Motion

JOI, Inc. should seek formal expressions of interest in providing/operating an ODP data management system to include an integrated shipboard computing environment and shipboard and shorebased data analysis, archiving and publication.

Vote: for 13; against 0; abstain 3; absent 1

e) Extended downhole measurements

Dorman outlined this recommendation. PCOM, with input from DMP, should determine the need for, and type of, additional routine downhole measurements to be supported from commingled funds. BCOM should review the costs of any additional measurements, assess offsets and recommend program changes to EXCOM. Subject to EXCOM recommendation, JOI, Inc. should then tender for and implement appropriate subcontract.

Dorman explained that this did not involve development, but simply taking advantage of techniques that are beyond the present routine logging operations. In response to a question from Maxwell on timing, Dorman said that that would depend on scientific need. Austin noted that PCOM had assigned downhole measurements to specific legs. The only additional tool that had been identified as routine was FMS. There were probably no other tools suited for routine deployment. There were cost and ship time issues involved. Helsley felt that PCOM was doing the job and that there was no need to tell them what to do. Dorman pointed out that the subcommittee had included this recommendation because it had received expressions of interest. Helsley thought that the expressions of interest did not relate to the present program and that this was a PCOM matter. Heinrichs felt that this was a variant on the need to incorporate third-party tools and that no action was needed at present. In response to a question from Maxwell, Dorman said that this recommendation also covered revisiting sites and re-entering without the drillship. Boillot was uncomfortable with use of the word "routine". Dorman explained that the subcommittee defined "routine" to mean supported by commingled funds. Maxwell added that this did not imply use at every site. Austin pointed out that DMP and PCOM were presently trying to codify the relationship between third-party tools and ODP. The guidelines were being revised by DMP to strengthen enforcement. He felt that "routine" in the subcommittee's recommendation e) was synonymous with what PCOM and DMP termed a mature tool. He felt that recommendation e) was already being implemented. Helsley agreed

that there was no need to make a recommendation. Austin, however, recalled that the subcommittee had responded to expressions of interest. EXCOM passed the following motion.

EXCOM Motion

PCOM, with input from DMP, should determine the need for, and type of, additional routine downhole measurements to be supported from commingled funds.
BCOM should review the costs of any additional measurements, assess offsets and recommend program changes to EXCOM.
Subject to EXCOM recommendation, JOI, Inc. should tender for and implement appropriate subcontract.

Vote: for 13; against 1; abstain 2; absent 1

f) Engineering and development engineering

Dorman explained that the subcommittee had discerned the lack of a rigorous development environment. It, therefore, recommended reconstituting TEDCOM as a parallel to PCOM, to be responsible to EXCOM for: 1) development and assessment of new drilling and downhole technology, 2) assessment of alternative and additional platforms, and 3) assessment of, and recommendations for, post-1998 technology options. Further, the service panel structure should be modified to meet the needs of TEDCOM.

As a first order of business, with input from DMP, TEDCOM should recommend procedures for implementing a rigorous borehole measurement development group, including costs involved. In addition, reporting responsibilities and TEDCOM's charge and structure should be included in the terms of reference of the proposed Advisory Structure Review Committee.

Rosendahl expressed support, but noted that PCOM had stated that TEDCOM would not meet often enough unless its members were paid. In particular, work on deep drilling would not get done. Maxwell pointed out that concerns had been expressed regarding having TEDCOM report to EXCOM. Science should drive ODP and TEDCOM should, therefore, report to PCOM. Dorman replied that the Science Advisory Review Committee could advise on that. On some issues, TEDCOM would have to report to PCOM, while reporting to EXCOM on others. Rosendahl stressed that deep drilling would require several $100,000s per year and asked where that would come from. Leinen stated that TEDCOM already had responsibilities; it was more a question of motivation. Dorman answered that that was why the subcommittee had recommended reconstituting TEDCOM.

Maxwell noted that this was a fundamental problem. The future depended on engineering, but that would cost money. If money was not provided, science would be restricted. Austin explained that it was his feeling that PCOM should first maximize the capabilities of *JOIDES Resolution*. That was an issue of community will. For example, PCOM had placed a deep site in the FY93 schedule. He added that there was, at present, no money in the system to fund RFPs for pore-fluid sampling and deep drilling and asked whether, therefore, RFPs should continue to be produced. Helsley felt that EXCOM should ask PCOM to review TEDCOM's charge and membership. Austin said that TEDCOM had historically been a bit disorganized. Some new members had expressed an interest in being more active, but members were all full-time industry personnel. In order to get more out of TEDCOM, it would be necessary either to pay members or draw on different groups. Currently, TEDCOM advised ODP-TAMU. The subcommittee was recommending something different altogether. Dorman stated that TEDCOM or a new group could be used. Helsley thought that a recommendation from PCOM was necessary on this issue. Austin responded that PCOM would prefer TEDCOM to report to

PCOM. Engineers were reluctant to volunteer their time, however, and if TEDCOM members were not paid, the resulting TEDCOM would be a very different group.

Maxwell noted that EXCOM planned to establish an Advisory Structure Review Committee. It would consider science and engineering. He suggested delaying implementation of recommendation f) until the review committee had reported. Helsley added that PCOM should also tell EXCOM its preferences. Austin felt that PCOM had done that with RFPs, but they cost money. People were getting frustrated and were reluctant to do the work if there were to be no results. PCOM also had listed its engineering priorities. Dürbaum proposed modifying the terms of reference of the Advisory Structure Review Committee to include technology. Maxwell agreed. Dorman stressed that the subcommittee had felt that this was the most important item it had discussed. In addition, a more rigorous borehole measurements development group was needed. Austin noted that DMP had received a prioritized list of tools from the community. One (high-temperature resistivity) was currently being built by Camborne School of Mines (UK). It was all done on a case-by-case basis. Dorman reiterated that the subcommittee had suggested that the rigor of the process be discussed by DMP. Austin commented that part of the problem involved DCS and the need for slimhole tools. Downhole systems were, therefore, linked to drilling systems. He felt that there was already sufficient rigor. The development group recommendation could be folded into DMP's terms of reference by the Advisory Structure Review Committee. Maxwell stated that no vote was needed and that the following actions could be subsumed under the Advisory Structure Review Committee.

<u>EXCOM Consensus</u>

DMP to recommend procedures for implementing a rigorous borehole development group; Advisory Structure Review Committee to consider technology/engineering needs.

g) Staffing

The subcommittee recommended that ODPC discuss procedures for enhancing international employment opportunities at ODP-TAMU, particularly staff scientists (3 out of 7) and marine technicians (10 out of 25). The subcommittee commended ODP-TAMU for allowing technicians to live elsewhere, including overseas.

Heinrichs stated that ODPC could discuss the issue, but implementation would have to be through JOI, Inc. and ODP-TAMU. Duce expressed ODP-TAMU's support for the recommendation. He added that, historically, all international candidates who had wished to join ODP had been able to do so. Interest among the international community should be encouraged. In response to a question from Westgaard, Pyle said that he did not know whether INS (US Immigration and Naturalization Service) regulations could be overcome. Heinrichs said that the options could be investigated, but that the ability to get exceptions might be limited. Rabinowitz said that, as a practical matter, it was not a problem. Boillot supported the recommendation, but felt that it was a job for EXCOM rather than ODPC. Maxwell responded that EXCOM could recommend that ODP-TAMU explore procedures.

Rabinowitz commented that the low value of the $US meant pay cuts for some international candidates. Dorman suggested that ODPC might wish to discuss pay on a national basis. Heinrichs emphasized that the whole recruitment package had to be attractive.

Maxwell felt that ODP-TAMU should investigate the matter. ODPC could take whatever action it wished. Heinrichs noted that ODPC was consultative. Dorman said that ODPC could identify disincentives on a country-by-country basis. EXCOM passed the following motion.

EXCOM Motion

ODPC to discuss procedures for enhancing international employment opportunities at ODP-TAMU, particularly staff scientists (3 out of 7) and marine technicians (10 out of 25).

Vote: for 15; against 0; abstain 0; absent 2

h) Supplies and services

The subcommittee recommended that JOI, Inc and ODP-TAMU modify current requirements for international tenders to encourage more international sourcing. In particular to allow additional international offerings below $25,000. Individual countries would need to identify vendors.

Duce stated that, while ODP-TAMU was in agreement, some things had to be done quickly. Huey added that engineering at ODP-TAMU would be less efficient if the $25,000 limit was lowered and there would be more delays. Maxwell agreed, but felt that there might be long-term advantages. Developments overseas might lead to savings. Huey replied that that was already being done. ODP-TAMU already looked for the best. Dorman said that the subcommittee had deliberately not stressed a specific cut-off price. The idea was to tender internationally whenever possible without impacting efficiency. For instance, it would be just as efficient to purchase supplies and services from Canada as from the US, because of proximity and lack of trade barriers. Helsley agreed that the recommendation should be general and that international suppliers should be used when feasible. It should also refer to all subcontractors and not just ODP-TAMU. Dorman agreed. He added that the substance of the recommendation was simply not to have an artificial $25,000 limit. EXCOM passed the following motion.

EXCOM Motion

JOI, Inc and subcontractors should encourage international tenders in order to encourage more international sourcing.

Vote: for 16; against 0; abstain 0; absent 1

i) Alternate platforms

The subcommittee recommended that PCOM establish requirements and opportunities for use of alternative, additional and support platforms. TEDCOM (as reconstituted) should assess technical and engineering suitability of such platforms to meet scientific objectives. ODP-TAMU to contract such platforms.

Baker noted that JOI, Inc., rather than ODP-TAMU, might subcontract the platforms. Briden stated that getting alternate platforms into ODP was no problem in principle. The advisory structure must sort it out. The Dorman subcommittee was recommending that the advisory structure be reorganized and that was in hand. However it was reorganized, the advisory structure must decide. EXCOM passed the following motion.

EXCOM Motion

PCOM should establish requirements and opportunities for use of alternative, additional and support platforms.
The advisory structure should assess technical and engineering suitability of such platforms to meet scientific objectives.

ODP-TAMU or JOI, Inc. as appropriate to contract such platforms.
Vote: for 16; against 0; abstain 0; absent 1

Post-1998

Dorman felt that, though it was premature to make specific recommendations for the post-1998 period, it was important to consider future technology. The Advisory Structure Review Committee should consider technology and the new TEDCOM. This should be included in the terms of reference of the review committee.

Maxwell stated that no further action was required. He thanked Dorman, Dürbaum and Falvey for their work on the subcommittee.

JOIDES ADVISORY STRUCTURE

Maxwell recalled that, at its January 1992 meeting, EXCOM had asked Maxwell and Baker to consider an *ad hoc* group to review the advisory structure and its terms of reference. Baker pointed out that the draft terms of reference and names of possible members were given in the Agenda Book (white pages 159-160). It had been decided that the review committee would not review EXCOM. Based on earlier discussions, it was clear that the committee should review both the science and technology advisory structure. It should also take into account the recommendations of PEC III (i.e., greater focusing of ODP) and recommendations of the Briden Report (i.e., more proactive PCOM and panels and additional modifications to the advisory structure when new platforms are added). The review committee would focus on the first 5-year period post-renewal (1993-1998). The committee would be appointed immediately and report to EXCOM in Australia in January 1993. Baker added that a means of funding the committee would have to be found.

Dorman asked that a paragraph be added to the terms of reference to cover discussions at this meeting on the importance of engineering and technology and also that at least one person from PEC III be included. There should probably not be participation from US JOIDES Institutions. In response to a question from Austin, Baker said that the nominees had not yet been approached about serving on the review committee. In response to a comment from Dürbaum, Maxwell said that members would have to be added to cover engineering and technology. Additional names were requested. Baker proposed that the number on the review committee be increased from six to eight (four US and four non-US). Maxwell requested that EXCOM members suggest nominees on Wednesday. EXCOM passed the following motion.

EXCOM Motion

An ODP Advisory Structure Review Committee should be established with the following terms of reference.
1. The committee will review and evaluate the current science and technology advisory structure of the Ocean Drilling Program. It will review the terms of reference and assess the effectiveness of the overall structure and the value of each of the existing bodies. Specific attention will be given to PCOM and its panels, committees, Detailed Planning Groups and Working Groups and the overall COSOD process.
2. The committee may recommend changes, not limited to strengthening of groups or deletion of groups, but will provide justification for its recommendations for change.
3. The committee is requested to take into account the discussions and suggestions of recent review groups, including the EXCOM *ad hoc* Committee on Long-Term Organization and Management of ODP, Performance Evaluation

Committee III and the EXCOM *ad hoc* Subcontracting Committee. Input from JOIDES EXCOM members should be solicited.
4. The committee will focus on the potential effectiveness of the science and technology advisory structures for the time period 1993-1998.
5. The committee membership will be eight, four from the U.S. and four from non-U.S. partner countries. Members will be experts in fields of science, technology and management. A liaison with the JOIDES Office will be appointed to the committee. The committee will be appointed by the Chair of EXCOM in consultation with the Chair of PCOM and the President of JOI, Inc.
6. The committee will carry out its work during 1992 and early 1993 and will report its findings and recommendations to EXCOM in June 1993.

Vote: for 14; against; 0; abstain 1; absent 2

Note: the motion shown here is a final version, slightly modified during a brief discussion on the final day of the meeting

INCORPORATION OF NEW VESSELS

Austin explained that PCOM had contacted consultant H. Zaremba with a view to performing a study of additional platforms. Zaremba's proposal focused on development of a platform deployed from *JOIDES Resolution* (dependent platform) and had received mixed reviews from the advisory structure (the dependent option not being feasible on *JOIDES Resolution, according to Sedco-Forex*).

Sedco-Forex had provided costs for use of additional platforms offshore New Jersey and at MIT guyot. The cost was ~$1.8M in each case. That was as far as PCOM could take the matter without addressing the issue of what could be cut from the budget to make funds available. A source of funds must be identified to permit further progress.

PCOM was interested in maximizing capabilities of *JOIDES Resolution* before it opted for new platforms. With that in mind, PCOM has chosen to drill a single deep hole on Leg 149 (NARM non-volcanic). The co-chiefs planned to dissuade PCOM from that strategy. Austin reiterated that deep drilling was in large part a matter of community will.

In response to a question from Maxwell, Austin said that PCOM felt that the proposed additional platform sites (A&G and New Jersey) were worthy of being drilled, but that money to do so would have to come from some other ODP operation, e.g., ice support vessel or DCS. At the moment, additional platforms were less important to PCOM than other initiatives. Austin noted that the ODP budget was presently below LRP projected levels. In response to a question from Huey, Austin said that the $1.8M estimate for the cost of an additional platform was for bare-bones drilling without lab support. He added that PCOM was looking for input to support such work.

ADJOURNMENT

EXCOM session adjourned at about 5:00 PM.

JOIDES EXCOM/ODPC
Tuesday, 16 June 1992

Joint Session of ODP Council and JOIDES EXCOM

530. Initial Business

Opening Remarks

Maxwell called the joint EXCOM/ODPC meeting to order at 9:05 AM and turned the meeting over to Heinrichs. Heinrichs welcomed the attendees to the joint session. Baker explained logistics for a group photo and the EXCOM/ODPC annual dinner. Heinrichs called for introductions around the table.

Adoption of Agenda

Heinrichs explained that the joint meeting had a full agenda. The report of an EXCOM subcommittee on internationalization of the JOIDES Office (established on Monday) would be added to the Briden Report agenda item. There were no further additions to the agenda, which was adopted by acclamation.

531. Summary of Scientific Results: Leg 143, Atolls and Guyots I

Winterer, Leg 143 Co-Chief Scientist, explained the southeast-to-northwest age progression of Pacific seamounts, which moved northwest with the Pacific plate, sinking as the plate cooled. Many seamounts capped by reefs had become guyots, and contained a rich record of subsidence and sea-level change. Seismic records showed suspected reef-like rims with internal, layered reflectors of lagoonal sediments.

These layered sediments appeared an attractive target for sea-level studies; sea-level drops led to lithification and alteration of sediment during exposure, resulting in layering. Guyots of Cretaceous age provided an opportunity to examine the record of Cretaceous sea level and compare it with that recorded in distant sections. Short-term fluctuations (~1 m.y.) in the global sea level curve of Haq and others are the most enigmatic because there were, apparently, no extensive ice sheets during the Cretaceous.

Winterer focused his discussion on the Mid-Pacific Mountains. Site 865 was drilled in the lagoon of Allison Guyot. Penetration of 300 m had been planned, but drilling rates had been faster than expected. In addition, recovery improved with depth. A unique section of Eocene and Paleocene sediment was recovered, ending in basalt sills (not basement) at over 800 mbsf. A rapid subsidence rate of ~400 m/m.y. was demonstrated, together with a record of uplift, subsidence and further uplift. Logs obtained were excellent. Stable isotope studies would determine whether log fluctuations were the result of sea-level variation.

Three sites were drilled at Huevo Guyot. An old basin site had shown Huevo Guyot to be as old as 120 Ma. Basement proved to be much deeper than expected and was finally encountered at ~1700 mbsf. Once again, the rate of penetration was faster than expected. The hole stayed open and logs were excellent. Karst topography on top of the guyot suggested a complex history and a three-hole traverse was drilled, with two holes close to the edge of the guyot. Deposition appeared to have occurred in discreet episodes: 5-6 m.y. during the Aptian-Albian, followed by a 10-15 m.y. gap. The whole sedimentary record indicated paleo-water depths no deeper that 10-15 m, illustrating that carbonate sedimentation kept up with sea level. The bottom of the pile was now at 3000 mbsf and there was a huge area (Mid-Pacific Mountains) at

this depth. This suggested that a vast area of the western Pacific was at sea level at ~120 Ma. Assuming that this area was not decoupled from its surroundings, it was probable that an even greater area was involved.

It appeared that assumptions about sea-level fluctuations being recorded in Mesozoic reflectors were probably incorrect. Reflectors were probably the result instead of diagenesis (dolomitization), unlike Cenozoic reefs. Furthermore, the reef model for guyots was incorrect. Reefs were not encountered and the guyots appeared to have characteristics of carbonate platforms, with edges at paleo-water depths of ~20-30 m in quiet water, but still able to keep up with sea level. This yielded new information on anatomy of Cretaceous rudist reefs.

Three periods of uplift and three of subsidence had occurred. Uplift of 2 km occurred during one episode. Waves of volcanism in the western Pacific were probably capable of changing global sea level by ~20-25 m. Before any future drilling attempts, more MCS data were required in order to determine reef thicknesses. This region might have been the place giving rise to Cretaceous sea-level fluctuations.

A shallow-water drilling test was conducted at the end of the leg in 38 m of water near one of the passes at Enewetak. A taut wire was used, with the drillship dynamically positioned according to the angle of the wire. Core recovery was poor and the drillship moved off station by ~1 m on one occasion. Current velocities were up to 1 kt and fluctuating. Winds were steady in direction (NE trades), but their speed fluctuated. Winterer characterized the results of the test as heartening. It might be possible to drill atolls and inshore continental margins using *JOIDES Resolution.*

Discussion

In response to a question from Austin, Winterer said that sills were encountered at only one site. Flows did not distinguish between water and wet sediments and could become sills. Replying to a question from Bogdanov, Winterer said that the duration of the observed hiatus was ~15 m.y. There were no mid-Cretaceous reefs in the Pacific or Caribbean. They did not start when edifices subsided through sea level. Cavities contained pelagic sediment. Görür noted that there were many carbonates in the Tethyan belt. Aptian-Albian was a time of major transgression, which was seen in Leg 143 drilling results. He advocated caution in relating reflectors to sea-level fluctuations. Winterer agreed, adding that some participants on Leg 143 had had Tethyan experience. It was known that some of the reflectors were diagenetic. Reflectors were known to match sea level events in Cenozoic sediment, but not in Cretaceous sediment.

532. Ocean Drilling Program - Recent Past, Present and Near-Term Future Through 1993

ADVISORY STRUCTURE REPORT

Austin noted that his report was summarized in the Agenda Book (yellow pages 12-17).

JOIDES panels met in the spring and fall. Service panels advised thematic panels. Panel members served for 3 years, PCOM members for 4 years. M. Delaney (UC Santa Cruz) had been appointed as new chair of OHP.

DPGs had taken the place of regional panels. NARM-DPG and NAAG-DPG had helped with FY93 scheduling and had been disbanded. DH-WG, SL-WG, OD-WG and an *In Situ* Pore

Fluid Sampling WG were all currently active. PCOM tried to keep the number of DPGs and WGs to a minimum.

PCOM met three times per year, in April, August and December. At its April 1992 meeting, PCOM set the general direction of the drilling vessel for the next four years (Agenda Book, yellow pages 13 and 15). *JOIDES Resolution* would spend 1993 in the North Atlantic and the balance of the four years, until April 1996, in the Atlantic and adjacent seas and the eastern Pacific. This would be reevaluated annually.

The FY93 Program Plan comprised: Leg 147, HD; Leg 148, Hole 504B (a Leg 148 DCS test was deferred as a result of DCS problems on Leg 142); Leg 149, NARM non-volcanic I, involving a single deep hole (this would be the first leg of what might be an 8-leg NARM program); Leg 150, NJ/MAT (shallow-water drilling to be attempted, safety concerns related to shallow gas); Leg 151, NAAG I (drilling on Yermak Plateau would be attempted, ice-support vessel required); Leg 152, NARM volcanic I. FY93 program ends in November 1993. Heinrichs stressed that NJ/MAT sites judged unsafe would not be drilled. Austin agreed. In response to a question from Dorman about alternate sites, Austin said that NJ/MAT comprised 12 sites, but that only 7-8 could probably be drilled in the time available.

Austin reported that PCOM had carried out prioritization of both drilling and non-drilling engineering items with the following results. 1) System developments: a) DCS evaluation and improvements (PCOM would hear a report from ODP-TAMU on DCS in August); b) engineering developments related to core-log integration (including TOTCO, core orientation and sonic core monitoring); c) deep drilling system/capability (an RFP was under development by ODP-TAMU and TEDCOM); d) improvements in existing coring techniques (i.e., XCB, RCB and APC). 2) Leg-specific developments: VPC for legs 146 (Cascadia) and 150 (NJ/MAT). This prioritization provided input to ODP-TAMU.

PCOM also received a short-list of non-engineering items prioritized by the JOIDES advisory structure. PCOM advised JOI, Inc. to purchase all of the items on the list as funds became available.

At this meeting, EXCOM would approve the FY93 Program Plan and also the four-year FY93-96 Program Plan. There had been some changes. The FY94 Program Plan would be defined at the December 1992 PCOM meeting. The JOIDES Office would put together a prospectus to be ranked by the thematic panels at their fall meetings. A preliminary assessment of drillability would be provided by SSP prior to that time.

Some LRP goals, i.e., deep stratigraphic tests to > 2.5 km and drilling through oceanic lithosphere to the Moho at depths of 5 km or more, would exceed the capabilities of *JOIDES Resolution.* PCOM endorsed the need for alternate and multiple platforms. PCOM was interested in EXCOM input and in hearing of evolving plans within EXCOM. Cost was a major problem. Could EXCOM suggest how to go beyond the concept phase?

PROGRAM MANAGEMENT REPORT (JOI, INC.)

Pyle handed out a report on the DCS review meeting held at College Station on 29-30 October 1991 and including results of Leg 142 and subsequent PCOM actions.

Regarding the FY92 budget, the previous deficit had been resolved. JOI, Inc. had requested $62,000 from NSF to complete the high-temperature resistivity tool (at Camborne School of Mines, UK). The extra amount was needed because OPCOM funds were not available. Uncommitted SOE money would be needed for the Committee on Water Sampling (J. Edmond chair) for travel and equipment. The high-temperature cable (from BRGM, France) needed

tests. RFPs for a pore-water sampling device and deep drilling would be presented to PCOM at its August 1992 meeting. Both of these were also candidates for use of uncommitted SOE money. There had been no increase in the PPI and day rate, enabling ODP-TAMU to use the extra funds for new drill pipe and for recoating drill pipe.

Outstanding issues included the future of DCS. ODP-TAMU would report to PCOM in August; PCOM would discuss the issue then. DH-WG had studied computing needs and the DH-WG Steering Committee was working with ODP-TAMU. Reactions to PEC III, and the Briden and Dorman reports were awaited. NSF's review of the four-year plan seemed to be going well. It had highlighted concern about publicizing ODP. Definitive news was still awaited about most international partner renewals. Pyle expressed the hope that they would all come through. RFPs (as noted above) to improve the capabilities of *JOIDES Resolution* were awaited.

SCIENCE OPERATOR (ODP-TAMU)

Rabinowitz circulated a briefing book containing overheads used in his report, as well as other information. He stated that he had seen a lot of good science carried out in ODP by a broad scientific community. ODP had encountered a wide range of operating conditions on legs 101-143 and had lost very few days due to weather conditions.

Rabinowitz went on to review achievements of a few selected legs. During Leg 131 (Nankai), seven holes were drilled near the toe of actively accreting sediments. For the first time, the accretionary prism and décollement had been penetrated (to basement). Current speed was 2-3 kts. Paleoceanography Leg 138 (Eastern Equatorial Pacific) recovered 5300 m of core. Recovery of demonstrably complete sections was achieved for the first time (using MST). Complete sections were essential for paleoclimate studies. Leg 139 (Sedimented Ridges I) drilled sulfide mounds and penetrated 95 m of massive sulfide. This comprised the first 3-D sampling of a seafloor sulfide deposit. Hole 504B was deepened by ~400m to over 2000 mbsf on Leg 140, following fishing which removed junk left by Leg 137. DSDP and ODP had spent six months on-site at Hole 504B. Hole 504B had recently received publicity in the form of an article (reprinted in the handout) in *The Daily Telegraph* newspaper (UK), dated 20 January 1992.

Developments included core-log correlation. Laboratory resistivity measurements were made for the first time on Leg 133 (NE Australia). Bacterial studies had found bacteria at all depths sampled (to ~500 mbsf in the Japan Sea). Bacteria were dormant below ~10 m, but would multiply. Such studies extended the biosphere. Two CORKs had been deployed on Leg 139 to keep seawater out of holes and allow a return to thermal equilibrium. Thermistor strings and data loggers had been emplaced. PCS was now an operational tool. MDCB was a long-term development. It operated at high r.p.m. and had taken two successful cores on Leg 141 (CTJ) and three on Leg 144 (A&G Leg B). MDCB dramatically improved recovery. The hole to be begun on Leg 149 (NARM non-volcanic I, Iberia Abyssal Plain) would eventually become the deepest hole drilled by ODP. During Leg 150 (NJ/MAT), it was hoped to drill in water as shallow as 40-50 m, perhaps 30 m. The challenge during Leg 151 would be ice. It might be possible to drill with 40-50% ice cover if the ice support vessel was powerful enough to push ice floes.

Since the January 1992 EXCOM meeting, Leg 141 had been completed, legs 142 and 143 had been carried out and Leg 144 had begun. Leg 141 (CTJ) had drilled five sites to investigate processes associated with subduction of an active spreading ridge. In addition, a BSR was drilled to study gas hydrates. No hydrate was recovered, even by PCS, but other indicators suggested the presence of gas hydrate and that hydrate occupied ~25% of pore space. Leg 142 (Engineering/EPR) had tested DCS IIB. There had been some successes (mini-HRD, DI-BHA,

refined bits), but the secondary heave compensator had not worked. There had, therefore, been no proper test of DCS. Studies were currently underway at ODP-TAMU to investigate reasons for the failure. Leg 143 (A&G Leg I) had already been discussed by Winterer. Leg 144 (A&G Leg II) was ongoing and seemed to be encountering a reversed seismic stratigraphic problem from that of Leg 143, in that basement might be shallower than expected. Staffing was proceeding and permission to drill Leg 146 was being negotiated with Canada.

ODP-TAMU was approaching its goal of ~36 months post-cruise for publication of Scientific Results volumes and ~12 months post-cruise for Initial Reports volumes. Approximately 40,000-60,000 samples/yr were being distributed from *JOIDES Resolution* and 30,000-60,000/yr from repositories. All Leg 138 sampling was shorebased and set a Gulf Coast Repository (GCR) record. Active sampling of old core was continuing. West Coast Repository (WCR) cores were still being sampled, even though that repository had not received cores for 9 years (see graph in handout). In response to questions from Moss and Briden, Rabinowitz said that there seemed to be little decay in the rate of sampling WCR cores. WCR sampling appeared to have picked up as the drillship reentered the Pacific region (see graph in handout).

Rabinowitz stated that it was generally acknowledged that ODP had originally obtained an excellent day rate. The day rate had risen slower that the US Consumer Price Index, generally considered a lower bound estimate of the rate of inflation. The day rate only changed when there was a change of >2% in the PPI and it could not change within six months of the PPI's last change. Effectively, therefore, ODP was paying ~$2M less for *JOIDES Resolution* than it had in 1985. Moss asked why, since ODP-TAMU bought supplies internationally, it related the day rate to the US inflation rate and not, for instance, Japan's. Rabinowitz replied that comparison with the US rate seemed reasonable, adding that, since *JOIDES Resolution* was a French/UK ship, comparison with their even higher inflation rates would be justified. In response to a question from Dorman, Rabinowitz said that as of Leg 143 *JOIDES Resolution* now had an Internet connection.

Engineering Development

Rabinowitz introduced Huey, who continued the Science Operator report with a discussion of engineering developments. With regard to responsiveness to international technology, Huey explained that ODP-TAMU had maintained liaisons with many international programs for some years. He acknowledged that ODP-TAMU might not be structurally capable of maximizing those connections. In terms of dollars, ~$^2/_3$ of ODP-TAMU's development engineering effort was dedicated to DCS. In terms of personnel: for Leg 132, four engineers were employed on DCS and seven on other developments; for Leg 142, four engineers were employed on DCS and nine on other developments. DCS absorbed a lot of money, but more engineers were currently working on other projects than had been the case at the time of Leg 132. Not all of ODP-TAMU's development engineering activities were, therefore, devoted to DCS.

DCS involved more than coring. Huey stressed that all Leg 132 deficiencies had been corrected for Leg 142. HRBs worked fine and the back-off system had been perfected. Much had been learned from Leg 142 about possible future drilling techniques. EPR turned out to be a different environment from that of the Mid-Atlantic Ridge encountered on legs 106 and 109. It was, therefore, difficult to design for one location.

The primary heave compensator removed most heave, but left some, e.g., 1 ft remained from 2 m heave. The remaining heave was still too much for DCS. Secondary heave compensation had to remove all but 0.6" for DCS to operate, but the secondary heave compensation system had failed to work on Leg 142. Reasons were unclear. ODP-TAMU was examining hardware and also assumptions that had been made that might be incorrect. ODP-TAMU would take a

fresh look at the approach to secondary heave compensation using outside experts. In response to a question from Briden, Huey said that it was no longer certain that the secondary heave compensator had worked as well on Leg 132 as had once been thought.

Turning to other developments, Huey noted that core-log integration followed DCS in PCOM's engineering prioritization. Work on VPC was continuing. VPC was a piston corer without a piston and driven by a hydraulic modification of a pneumatic jackhammer. CORK was a simple concept, but difficult to implement in practice. SCM was a means of keeping track of core while it entered the core barrel, enabling the interval from which core was recovered to be accurately determined. It was also useful for hard rock orientation. In response to a question from Helsley, Huey said that SCM data was not yet transmitted to the surface and was, therefore, not received in "real-time".

WIRELINE LOGGING SERVICES (ODP-LDGO)

Goldberg began with a review of FY92 operational developments. During legs 139-143, 13 holes were successfully logged. The Japanese magnetometer was successfully run at Site 865 (Leg 143) and BHTV was run in Hole 504B. On Leg 142, 2 of 3 holes had been successfully logged (one using SES). The Japanese magnetometer had, however, flooded and was not reparable due to a lack of spare parts. This highlighted problems resulting from little or no management of third-party tools. Standard tools were planned for legs 145 and 146, with GEOPROPS also to be run on Leg 146.

Developmental testing was being carried out on high-temperature cable, high-temperature resistivity tool and directional shear sonic tool. Log data distribution survey results had been tabulated and showed a desire for data on CD-ROM. It was, therefore, planned to put logging data on CD-ROM in future. The DataNet proposal would include other data in addition to logging data.

Temperature logs had been run at Hole 504B and Site 858 (Leg 139). At Hole 504B, a depression in temperature gradient suggested a permeable aquifer at depth, which was drawing down fluid. Successive legs at Hole 504B showed that flow had stopped and restarted. Findings at Site 858 were similar. The hole cooled as it was deepened, suggesting that an aquifer had been opened up. At Hole 857C (Leg 139), resistivity and gamma ray logs revealed interlayering of sediment and basalt.

DataNet

A handout outlining the DataNet concept was available at the meeting. Goldberg explained that he had taken over work on DataNet ~2 months prior to the meeting. DataNet involved the following basic assumptions: need for data distribution, increasing internationalization and a "zero-sum" financial situation. The proposal available at the time of the January 1992 EXCOM meeting had since been modified.

There had been significant, recent losses of staff, and ODP-LDGO wished to staff up in a way particular to the DataNet concept. DataNet could be undertaken immediately and should be. It involved other countries and institutions (see handout). Major differences with the previous version were that ODP-LDGO would be prime subcontractor and would maintain a shipboard presence.

Different sections of the DataNet concept involved different institutions (see handout) and the following components.

- Core-log integration development: a complex operation which could not be done only onboard *JOIDES Resolution*.

- Shipboard wireline operations: involving aspects of the Schlumberger subcontract and basic log analysis, based in France, increasing technology available (could happen in 4-6 months).
- Shipboard wireline staffing: sharing with partners to increase staffing.
- Database development and management: to be based at ODP-LDGO.
- Shorebased log analysis centers: to be widely dispersed.
- Tool development: currently done on an *ad hoc* basis, but would be enhanced by dispersion.

For phases of implementation were envisaged (see handout).

- Phase I, current logging operations (start immediate/October 1992), comprising shipboard logging operations and staffing, shorebased log analysis and ongoing tool development. ODP-LDGO and international centers would be involved. It was felt that shipboard logging operations and log analysis should not be separated.
- Phase II, core-log database development (start <1 year/October 1993), involving installation of Maxis, database pilot study, new tool development, shipboard technical support and core-log integration development.
- Phase III, new technology and program growth (start > 1 year/October 1994), comprising new tools and technical development, online database/Internet access and core-log integrated analysis center. This was where costs would be involved. Decisions could depend on funding.
- Phase IV, full implementation (start October 1995): database, shipboard, log and core-log analysis centers.

In summary, Goldberg stated that DataNet was workable, had a reasonable implementation schedule and a reasonable budget. Pyle asked how DataNet was consistent with a "zero-sum" budget. Austin added that DataNet would cost $9M/yr versus the present logging budget of $4M/yr. Goldberg responded that DataNet must be considered in phases. Phases I and II represented a minimum under the current SOW, involving ~6% increase over current budget. They would occupy ~2 fiscal years and would be a start toward full implementation.

FISCAL REPORT FOR 1992-93 (NSF)

Malfait reported that not all of the FY91 fuel increment of $400,000 - $500,000 had been needed. Those funds were carried forward to FY92. ODP had entered FY92 with hopes of increasing the number of international partners and OPCOM had identified additional activities. The FY92 budget, however, was only $41.57M. At the January 1992 EXCOM meeting, budget scenarios for FY93 for six ($43.2M) and seven ($45.3M) international partners had been presented, the difference being the $2.1M supplement to bring the budget to LRP level. At present, the FY93 budget was expected to be only $43.2M.

In response to a question from Austin, Malfait confirmed that, if the $2.1M increment did arrive, it would not be separately prioritized (as by OPCOM), but would just be part of the regular budget. In reply to a question from Briden, Malfait stated that the FY91 international contribution had not been $16.5M (i.e., 6 x $2.75M). Heinrichs explained that the 0.5-year contribution from Russia was being spent over FY92 and FY93 in a carry-forward fashion. The FY92 and FY93 international contribution figures were made up from six membership contributions in each year plus a single 0.5-year contribution.

Discussion

Austin noted that the advisory structure was using the LRP as a scientific planning document, but there was a discrepancy between the actual budget and LRP budget figures. Heinrichs responded that that issue would have to be addressed after ODP had been renewed beyond FY93 and the number of international partners was known. At that time, it would be necessary to look at the LRP and financial framework.

Following a break for lunch, Heinrichs introduced R. Corell of NSF. Corell welcomed the opportunity to attend EXCOM and take questions that might help to focus NSF discussions. NSF had the highest commitment to ODP and took a long-term view of ODP. ODP's work was important in helping NSF build support in the White House and in the US Congress. It had been easiest to interest the White House, which had a commitment to basic research. Congressional support was good in principle, but sometimes decisions producing adverse repercussions were made. The scientific productivity of ODP continued to be at a high level and ODP was important to some more-focused programs, e.g., global change.

Briden asked whether the US was providing funds to Russia to allow it to stay in ODP. Corell replied that that effort was still underway, but that a decision had not yet been made. Austin noted that ODP had received annual budget increases of 3-4%, yet there was a scientific need for more. He asked whether NSF could provide more funds. Corell replied that the planning cycle would help in that regard. There was no reason for opposing it in principle, but it needed to be put on a solid basis. Heinrichs, and others in NSF's ODP program, were the key players. EXCOM should keep them informed of its plans and NSF would do what it could within its budgetary framework.

533. Ocean Drilling Program, 1993 and Beyond

FOUR YEAR PLAN, 1993-96 (JOI, INC.)

Pyle reported that the FY93-96 Program Plan had been sent to EXCOM on March 17. At its April 1992 meeting, PCOM adjusted the science plan as follows: a) Leg 148 became a return to Hole 504B (DCS test postponed), and b) priority was given to a single deep hole over the transect approach on Leg 149 (NARM non-volcanic I).

JOI, Inc. had been told by NSF to adjust the FY93 budget, reducing it by $400,000 to the six-partner BCOM level. This sum had been taken from DCS, pending ODP-TAMU studies and PCOM review in August 1992.

A handout summarized budgets and budget projections for FY92-FY96 together with FY93 SOEs. The FY93 budget would be $43.2M, $2.1M below LRP level. At the lower, six-partner budget level, computer services, shipboard scientific equipment upgrades and DCS III dropped out of FY93 SOEs. Pyle commented that the budget was falling far behind the scientific planning curve.

REVIEW OF BRIDEN REPORT RECOMMENDATIONS

Maxwell (sharing chair with Heinrichs) noted that the first item of the Briden Report, on which action had been taken the previous day, had been Governance of the Program. No impediments were anticipated to internationalization of JOI, Inc., but there was some question as to whether international partners would benefit. Further discussion should take place at today's joint EXCOM/ODPC meeting. Maxwell asked for comments.

In response to a question from Dorman, Baker stated that internationalization would not include all JOI, Inc. activities, but only those associated with ODP. JOI, Inc. activities would have to be split. Annex B, *Terms of Reference for JOIDES Executive Committee for the Ocean Drilling Program (ODP)*, was distributed as a handout as a response to an earlier request by Helsley. Maxwell expressed the hope that non-US members would use this opportunity to put forward their views on whether JOI, Inc. should remain a US organization. He hoped to settle the issue. Briden explained that he had included this item in his report for two reasons: 1) non-US

members had commented on the lack of non-US participation at this point, and 2) it was an anomaly with respect to the rest of the ODP structure.

Dürbaum stated that Germany was happy with the present arrangement. Bogdanov said that Russia had no comment. Kobayashi said that Japan had no interest in change. Boillot stated that France also declined to join JOI, Inc. Westgaard commented that Briden's suggestion looked good in principle, but that the present arrangement was not viewed as a problem. Change was, therefore, unnecessary. In addition, the liability aspect was complex. ESF was not ready for JOI, Inc. membership. Falvey (C-A) agreed, adding that it was difficult to make a decision on the spot when the liability situation remained unclear. An implementation plan would be needed before this issue could be put to a vote. Briden stated that, speaking now as the UK EXCOM member, UK had no wish to follow through with membership of JOI, Inc. He envisaged, with some regret, practical difficulties.

Baker expressed reluctance to work on a plan without expressions of interest. If ODP changed in such a way that changes in the membership of JOI, Inc. seemed useful, EXCOM could revisit the issue. Heinrichs noted that the current MOU told EXCOM to review and comment on the Program Plan, while the new MOU said that EXCOM must approve the Program Plan. Maxwell asked whether a vote was necessary or whether the discussions were adequate. Heinrichs replied that it could be taken as a consensus that no action was required.

EXCOM Consensus

EXCOM agreed not to proceed at present with internationalization of JOI, Inc.

Maxwell went on to summarize other decisions made by EXCOM (see also specific motions recorded previously in the minutes and listed in the Executive Summary).

- Internationalization of the JOIDES Office would involve moving it outside the US during FY95-96, with a return to the US for the subsequent two years. A subcommittee had been established to set up guidelines for bidders and EXCOM would return to the issue on the following day.
- ODP-TAMU would retain responsibility for curation and repositories through 1998, provide least-cost options and seek proposals from interested parties (including international parties).
- JOI, Inc. would tender routine at-sea logging, basic log analysis and quality control, effective October 1993.
- ODP-TAMU would look into upgrading computing. (This item had not passed and would be voted upon again by EXCOM the following day.)
- PCOM would consider science and science support functions to be performed over a digital data network.
- PCOM would consider additional routine downhole measurements, with BCOM to review costs.
- Consideration of engineering development was deferred to an Advisory Structure Review Committee set up by EXCOM (see below).
- ODPC should discuss procedures for enhancing international employment opportunities at ODP-TAMU.
- JOI, Inc. and subcontractors would encourage international tenders for supplies and services.
- PCOM would continue to establish requirements for alternative and additional platforms.

Baker explained that EXCOM would establish an Advisory Structure Review Committee to review PCOM and panels and take into account recommendations of the Briden Report, Dorman Subcommittee and PEC III. Input from past and present advisory structure members would be solicited. The review committee would focus on the 1993-1998 timeframe and would have eight members (four US, four non-US), together with a JOIDES Office liaison. The

Advisory Structure Review Committee would be empowered by the EXCOM Chair during this meeting and would report to EXCOM in January/June 1993. EXCOM would need to provide nominees for the review committee the next day.

Maxwell concluded the summary of EXCOM activities arising from the Briden Report, adding that significant moves had been made toward internationalization of ODP.

Discussion

Moss noted that the Dorman Subcommittee had recommended that the Site Survey Data Bank not be competed initially (Agenda Book, white page 130), because of strong recommendations from SSP and PPSP and a large amount of analog data there. Moss did not find that argument compelling and proposed that the Site Survey Data Bank be considered open for competition. Dürbaum said that the main reason for the Dorman Subcommittee's recommendation was that it found a small and effective group at the Site Survey Data Bank supporting the advisory structure. Austin asked why Moss did not find the argument compelling. Moss replied that the Dorman Subcommittee was not charged to sort out which aspects of ODP were effective and then only compete those that were not. In response to a question from Austin, Heinrichs confirmed that some statements of interest in running the Site Survey data Bank had been received. Austin stated that, in that event, Moss was correct.

Maxwell noted that EXCOM's idea had been to leave the Site Survey Data Bank as it was during 1993-1998. Dorman added that his subcommittee had been swayed by strong supporting comments of SSP and PPSP. Moving the Site Survey Data Bank would be easier if the data were digital, as he believed it would be one day. Austin stated that the underlying resource was dominantly seismic. The present arrangement with proponents was that the data would stay in the Site Survey Data Bank for ODP use. It might not be possible to move it without checking with proponents. Helsley wondered whether the Dorman Report was really what had been asked for at the January 1992 EXCOM meeting. He felt that the Dorman Subcommittee's charge was to identify what could be tendered. EXCOM had assumed that there would be a few offerers for a few components, but many were received for a wide range of components. The situation was more complex than originally envisaged. Briden responded that his feeling was that EXCOM had set up a subcommittee whose judgment EXCOM would stand by and respect. With respect to the Site Survey Data Bank, it was necessary to ask whether it was wise to compete it. Was it worth the effort and cost? was there interest? and would it help internationalization? It was reasonable for the Dorman Subcommittee to decide that it was not wise or worth it and would not help internationalization. Moss asked why the Site Survey Data Bank should not be opened up for competition if there was only US interest. Briden replied that his point about internationalization had been one of several reasons for not competing the Site Survey Data Bank.

Moss said that he accepted the Dorman Subcommittee's recommendation, but suggested that EXCOM revisit the issue after the data had been digitized and not wait until 1998. Heinrichs stated that if EXCOM was concerned about the record, it should vote on that recommendation and also that concerning retaining ODP-TAMU as Science Operator and *JOIDES Resolution* as primary platform for the first phase of renewal, which had not been voted on the previous day.

Maxwell pointed out that, when DSDP had started, LDGO had most of the seismic data. Much was analog, but that was still the only data in some parts of the world. It was not worth digitizing as it would be an expensive task. Austin added that even today most data went to the Site Survey Data Bank as paper copies. Either that would have to be digitized or tapes would have to be obtained from original sources. Maxwell concluded that EXCOM should return to this issue the following day.

Report of Subcommittee on Internationalization of the JOIDES Office

Austin reported that the charge of the subcommittee (Austin [Chair], Malfait, Nowell, Pyle, Westgaard) had been to consider details of the rationale inherent in EXCOM's endorsement of a move of the JOIDES Office from the US to a non-US venue during the period 1995-1996.

The subcommittee considered only the first move to a non-US venue. Those eligible to host the JOIDES Office should be non-US ODP partners with a firm commitment to ODP membership. The JOIDES Office should go to one of the following types of organizations practicing marine technology development and/or earth sciences research: 1) university or university consortium, 2) government laboratory(s), or 3) private laboratory(s) if educational/research function apparent. (Some prior experience with scientific ocean drilling desirable/required.)

Minimum qualifications for a successful bid were as follows.
1) Acknowledged scientific leadership at both PCOM and EXCOM Chair positions (both should be named and the PCOM Chair should be prepared to make a 3/4 time commitment). Co-location of PCOM and EXCOM chairs was not critical, but good communication between them was vital.
2) Proven capability to conduct routine and specialized written and oral communications in English.
3) Proven capability to communicate globally using a variety of electronic media (Internet, Omnet, fax) and established mail links (overnight express, etc.).
4) Cost requirements (including cost sharing) in line with (or less than) previous JOIDES offices (currently $250,000-$300,000/yr).
5) Office infrastructure necessary to support staff and tasks as outlined below.

Staffing should be sufficient to complete the following tasks.
1) Conduct three PCOM and two EXCOM meetings/yr. Preparation of agendas and minutes.
2) Editing *JOIDES Journal* (3/yr).
3) Coordination of ~20 other panel meetings/yr, ~50% in US and ~50% non-US venues.
4) Coordination of proposal flow (numbers of copies, etc., to be specified); communications among proponents and scientific advisory structure.
5) Monthly reports to JOI, Inc.
6) Coordination of bilateral liaisons between ODP and other international earth sciences efforts.
7) Coordination of existing/ongoing drilling efforts with other subcontractors and JOI, Inc.
8) Other desirable tasks not presently being undertaken.

A review committee should be set up to evaluate bids comprising 50% US and 50% non-US members with experience in the JOIDES Office and/or JOIDES advisory structure. Review committee to comprise (provisionally): H. Beiersdorf, O. Eldholm, J. Austin and N. Pisias (all with PCOM expertise); A. Maxwell, D. Caldwell, and C. Helsley (all with EXCOM expertise); P. Blum and M. Wiedicke (both with JOIDES Office expertise).

Proposed schedule: July 1992—request for bids from JOI, Inc. to partners; 1 October 1992—bids received; October 1992—bids sent to reviewers (~12); 1 November 1992—reviews received at JOI, Inc.; January 1993—to EXCOM for decision.

Briden noted that, in a normal review procedure, the proponent would be allowed to comment on reviewers' comments. Baker responded that another round had not been considered necessary. Heinrichs emphasized that, since proposals would be written in the fall of 1992 for a start in fall 1995, it was important that all use the same inflation rate. Dorman asked whether bids would require actual names of PCOM and EXCOM Chairs. Baker replied that chairs must be named in the bids or it would be impossible to approve expertise. Austin agreed that that was crucial.

MEMBERSHIP REPORTS AND STATUS OF ODP RENEWAL

Canada-Australia Consortium

Australia

Falvey reported that the two major contributors to Australia's ODP membership (ARC and BMR) had now confirmed their commitment for CY93, CY94 and CY95. The Australian ODP Secretariat had now moved from Tasmania to the University of New England (~400 km from Sydney), led by R. Arculus assisted by I. Metcalf. The Scientific Committee would meet later the same week in Canberra. Preparations were underway for the January 1993 EXCOM meeting in Coff's Harbour in northern New South Wales.

The Australian Science and Technology Council had announced replacement of BMR's *R/V Rig Seismic*. This represented the beginning of the review; there were no guarantees yet.

Canada

Riddihough reported that government funding in Canada was under considerable pressure. This resulted in a decrease in departmental budgets of ~5%/yr. Nevertheless, both the Geological Survey of Canada (GSC, Department of Energy, Mines and Resources) and the National Science and Engineering Research Council (NSERC) had renewed their contributions to Canada's ODP membership and had concluded that Canada's membership should be renewed and that they should continue to fund ODP.

Two funding departments had not yet made a commitment—Fisheries and Oceans, and Industry Science and Technology. These agencies would be approached during July 1992 with GSC and NSERC reviews as supporting material. It was hoped that they would agree to continue to provide support, but that was by no means guaranteed at present.

Once renewal of the Canada-Australia Consortium had been confirmed, bids for relocation of the Canadian Secretariat would be invited. These would be timetabled to result in a move of the Secretariat (and probably change of PCOM member) by 1 April 1993. Also, as a result of the program reviews referred to above, some reorganization of the Canadian ODP management may occur. This would concern the relative functions of the Canadian ODP Council and National Committee and their membership.

GSC was conducting an Environmental Impact Assessment of Leg 146 drilling on the Vancouver Island margin. Some sites had been opposed by the Canadian Department of Defense because they were within 10 nautical miles of ammunition and military gas cylinder dumps on the seafloor. Currently, precautionary measures such as video-scanning of the seafloor before drilling and washing down for the first 20 mbsf, to ensure that nothing was brought onto the deck from this zone, were being discussed. Assuming that this was acceptable to appropriate review bodies, assessment should be completed by the end of July.

Austin noted that, at PCOM level, communications between Canada and Australia had not always been effective. Falvey and Riddihough stated that they would be improved.

European Science Foundation Consortium

Westgaard explained that renewal was complex. More-or-less firm commitments had been received from all 12 member nations. There would be some shifting of % contributions. As

before, Nordic countries would contribute 50% and the rest the other 50%. Signatures would be sought in July.

ESF had a Scientific Committee and a Management Committee. Chairs of those committees changed every three years. The next Science Committee chair would be H.-C. Larsen and the secretariat would, therefore, move to the Geological Survey of Denmark in Copenhagen. Larsen would be the new PCOM member. The Management Committee chair would be R. Sartori (Bologna, Italy). He would be the next EXCOM member (alternate: J. Backman, Sweden) and the secretariat would remain permanently with Fratta in Strasbourg. The ODPC representative "at large" would be P. Fricker (Switzerland), with Fratta as deputy.

The Science and Management committees had both met and the Science Committee had reviewed itself. All 12 countries had now been represented on legs (Iceland was the last). Activity within ESF's science community had been boosted by the upcoming return of *JOIDES Resolution* to the Atlantic. There had been two recent scientific meetings, in Milan (spring 1992) discussing Mediterranean proposals, and in Denmark (May 1992) discussing proposals in the Atlantic and adjacent seas. Both had been very successful.

France

Boillot summarized conclusions of a recent evaluation of French participation in ODP, which had been positive and recommended renewal for 3-4 years. The Evaluation Committee had recommended some changes, however, in particular that ODP focus on three themes: a) paleoclimate, b) deep oceanic crustal structure and petrology, and c) evolution of sedimentary basins. In order to address these themes, the Evaluation Committee recommended drilling of very deep holes as part of a "crustal program" and involving spending several months at a single site. The committee also recommended modification of the science advisory structure to incorporate a Scientific Council (a "permanent COSOD") to consider ODP's scientific strategy (including long-term strategy). PCOM would be a subcommittee of the Scientific Council. The Scientific Council would also consider technology (TEDCOM would also report to the Scientific Council). Increased technology development was required, possibly at the expense of scientific cruises. A more balanced participation of national companies and institutions was required, with fair returns of knowledge, experience and industrial ownership. Finally, the Evaluation Committee recommended that alternate platforms meet the future technical requirements of programs such as global change and lower crust studies. The recommendations of the Evaluation Committee of French participation in ODP are included as Appendix 3.

Boillot listed French cruises related to ODP drilling (Appendix 3). There were other French cruises, not listed, less directly related to drilling.

Discussion

Heinrichs recommended that proposals regarding the proposed Scientific Council be submitted to the Advisory Structure Review Committee for addition to its terms of reference. Maronde asked about duration of the renewal period under consideration by France. Boillot replied that France was open to continue in ODP until 1998, but that it depended on EXCOM's actions on the Briden Report. Cailliau added that the answer was really three years, with two successive one-year increments as a follow-on. He hoped that France's commitment to renewal would end up being five years. Heinrichs acknowledged that the French renewal period was being negotiated.

Germany

Maronde explained that the budget of the German government was complex and in a serious condition because of issues related to incorporation of the former East Germany. Inflation rate was now >4%. Salaries in the public services had increased by ~6%. A budget increase of only ~2.5% was expected for 1993.

The Ministry of Research and Technology had not been very successful in its discussions, because science was considered of low priority. This year, DFG received a 5% budget increase (while salaries increased by 6%) plus Dm100M for activities in East Germany. Number of applications for funding (totaling Dm100M) increased by $^1/_3$ and funding rate was <50%. No major changes were foreseen. The Annual Meeting was held in Hamburg in March (~120 participants). The review panel for applications considered 48 applications in the ODP Priority Program and 39 were recommended for funding (for a total of Dm3.5M). The budget of the ODP Secretariat was Dm350,000.

At the July 1991 EXCOM meeting, European partners had discussed the possibility of a special fund to improve scientific interaction. Last year, Dm76,000 was spent on this initiative, compared to Dm68,000 this year. DMP had met at the KTB site at Windischeschenbach in early June. KTB staff held discussions with DMP members.

The EXCOM meeting in Bonn (January 1992) had been useful for renewal. A letter of intent had been sent to NSF in April confirming Germany's positive attitude. The Senate had met in mid-May and approved extension of the MOU and Priority Program for a further period of up to ten years. That was an unusual move, because duration of Priority Programs is usually only up to ten years in total. DFG would provide 50% of the German contribution, as in the past. The issue of intellectual property rights (IPR) had been mentioned at the January 1992 EXCOM meeting. At a meeting two weeks ago in Washington, however, a compromise had been reached. Developments in recent weeks had, therefore, been positive.

Dürbaum summarized German scientific activities. Many proposals had been received. Marine surveys to study crustal heterogeneities in the South Atlantic were continuing and drilling proposals would result. K. Hinz would be carrying out surveys in the HD area. Dürbaum hoped that the Leg 147 Co-Chiefs would keep in contact with Hinz. Mediterranean drilling proposals had been discussed. During DMP's meeting at KTB, Dr. Bosum (BGR) had showed results of 3-D magnetometer logging to 6 km depth. The instrument would be used in a deepened Hole 504B. KTB had reached a depth of 6400-6500 m. One of two major reflectors occurs at ~7000 m.

Discussion

Riddihough asked whether the compromise wording on IPR would be included in all MOUs. Heinrichs replied that it would not. MOU language would be roughly equivalent and compatible.

Japan

Kobayashi reported that Japanese renewal was still being negotiated with the government. Renewal had strong support of the Japanese scientific community and Kobayashi hoped for an eventual positive outcome. A brochure entitled "Footprints of Japan in ODP" (an abbreviated and updated version of the progress report shown at the January 1992 EXCOM meeting) had been printed and distributed to many Japanese geoscientists. Responses had been favorable.

A domestic workshop on "Ocean Drilling and Geology/Geophysics of the Pacific Region" was held in Tokyo on 24 March 1992 and was attended by nearly 70 scientists. Four *ad hoc* groups had been organized to focus Japanese proposals to the new ODP. The four objectives were: 1) global environmental change, 2) tectonics and fluid circulation in subduction zones, 3) mantle plumes and recycling processes in the deep earth, and 4) tomography of the earth's interior.

The Japanese community looked forward to *JOIDES Resolution's* Yokohama port call following Leg 144 (20-24 July). A logging school (the second in Japan—there had been a logging school there in 1987) was scheduled to be held at the Technology Institute of JAPEX during the port call and would provide an opportunity for communication with Japanese logging engineers and borehole scientists.

A symposium on new aspects of ocean drilling, including the proposed Japanese drilling vessel, was held by STA and JAMSTEC on 22 April 1992. There were ~100 participants, principally from areas of engineering and technology. The Japanese drillship was in the concept stage and budget negotiations were continuing. (A handout on the proposed Japanese drilling vessel was available.)

Russia

Bogdanov stated that he could not remember a more difficult time, financially, for Russian science. There was still no budget for June 1992. The Russian Academy of Sciences, for all practical purposes, had no foreign currency, even for scientific journals. An account containing Russia's ODP membership contribution had been closed and Bogdanov was not sure when access to the money would be granted. The Russian government agreed that ODP was important, but no letter to that effect had been written. Government and private sources were, however, providing money for the Russian drillship for this year and only ~375M Roubles more was needed. Some Russian currency was available for research.

Two scientific meetings had been held about Russian participation in ODP and scientific results. Russian drilling equipment had been discussed. It had the advantage of larger-diameter cores; Bogdanov felt that that would be a future necessity. Three icebreakers were potentially candidates as Leg 151 ice support vessel.

United Kingdom

Briden recalled that he had already reported UK's intent to renew at the January 1992 EXCOM meeting. Not much else had happened. UK would scrutinize the latest MOU (e.g., with regard to IPR). From now on, the entire UK subscription would come from NERC, simplifying matters. Administration was being simplified by cutting the Scientific Committee to a manageable size (it would now be composed only of UK members of JOIDES panels). There was a separate Grants Committee. The program of international travel and exchange, to promote collaboration among European scientists, was eligible for funding under NERC's science program, but Briden had no statistics about funding. The Science Committee meeting was coupled with an ODP forum (with ~100 participants) once/yr. Since management was all now within NERC, a separate committee was no longer needed.

R. Kidd was replacing H. Jenkyns as PCOM member. UK would respond to the invitation to submit proposals to host the JOIDES Office. Briden commented that it had been nice to hear repeated and complimentary references to the Camborne School of Mines high-temperature resistivity tool and that he was happy to see plans to move on to the digital version.

A survey of ODP sites on East Greenland margin would be conducted in July by R. White using *R/V Charles Darwin*. BIRPS, originally concerned with continental crust, had been

under review and would be renewed. BIRPS was relevant to ODP, as it had conducted surveys across the Banda Arc and Timor Trench, which would link to future BMR work. Furthermore, a BIRPS program in oceanic crust (by R. White) had revealed low-angle faulting through Layer 3 off Blake Spur. In addition, there existed a BIRPS European Community proposal for Mediterranean work in the Gulf of Valencia and Ionian Sea (the Aegean Sea component had been canceled). A new targeted research program on paleoceanography and climate change in the northeastern Atlantic hopefully would dovetail with ODP.

R/V Discovery had been lengthened by 11 m and was back in service. It was expected to have a further 15-20 years of operations. Power generation aboard had been increased by a factor of 9 and laboratory space increased by a factor of 2.5.

United States

NSF

Heinrichs reiterated Corell's earlier remark about the US's strong commitment to continue ODP.

Malfait presented the US report, with reference to a handout distributed at the meeting. There had been a significant commitment on the part of the US administration to increase NSF's budget. The budget was on track to double in 1994. In FY92, however, NSF's total budget had risen by 9.8%, in comparison to the requested increase of 17.5%. A request for a 17.6% increase for FY93 was now before the US Congress. Rumor suggested that the eventual increase would be <10%. Geosciences budget increased by 10.1% in FY92 and ODP's budget increased by 4.1%, to $36.4M. A 4% increase for ODP (to $37.8) had been requested for FY93. The FY92 ODP budget was distributed among Operations and Management ($23.81M), Unsolicited Science Proposals ($6.86M), USSSP/USSAC ($4.70M) and other foundation activities ($1.01M). FY92 unsolicited science programs were listed in detail in the accompanying handout. Field programs were Cascadia Margin (VSP), Ceara Rise (seismics and coring) and Barbados (3-D seismics).

Malfait reviewed the US timeframe for renewal. A two-phase review was involved: NRC/NAS review of LRP (report published) and NSF review of the FY93-96 Program Plan. Both would be presented to NSB in August for consideration of continued ODP funding. Recommendations of both reviews were listed in the handout and were generally similar to those of other reviews.

NSF ODP and Earth Sciences divisions were jointly supporting a US planning office for OSN. Those divisions were also jointly considering a proposal to extend the NJ/MAT (Leg 150) transect onshore. Finally, Malfait announced that E. Ambos had joined the NSF ODP staff as a visiting scientist.

JOI/USSAC

Kappel explained that the FY92 USSAC budget was $4.7M. Over half went to supporting shipboard scientists and scientists on JOIDES panels.

USSAC was also supporting the following Workshops and Results Symposia (Appendix 4): Cretaceous Greenhouse Coring Project (4-9 October 1992, Perugia, Italy); Results of Drilling in Western Pacific Active Margins and Marginal Basins (18-21 January 1993, Monterey, CA); support for four US scientists to give ODP-related talks at the International Geologic Congress (August 1992, Kyoto, Japan).

Funding of site survey augmentation involved tens of thousands of dollars in support of activities associated with high-priority proposals or drillsites. Among recently-funded proposals (Appendix 4) was a site survey for APC coring during Leg 146 in Santa Barbara Basin (one day of ship time on *R/V Farnella* to collect high-resolution seismic data).

The Distinguished Lecturer Series had started in 1991. Six lecturers were being supported for the 1992-1993 academic year (Appendix 4). As part of the Summer Research Program for Undergraduates, two programs would be supported in 1992 (at Hawaii and LDGO), involving 8 students each (Appendix 4). Five JOI/USSAC Ocean Drilling Graduate Fellowships were awarded for 1991-1992 (Appendix 4). Finally, testing of the SIO wireline reentry system was being sponsored. *R/V Moana Wave* was scheduled to carry out the first test logging operation in the OSN-1 hole off Hawaii in early October 1992.

Discussion

Austin recalled that, at the January 1992 EXCOM meeting, it had been stated that NSF would be providing >60% of ODP's budget if the Russians were not to renew. He asked whether NSF had any further comments. Heinrichs explained that the Russian contribution was in arrears. It had been paid up to 31 December 1991. ODPC would have to discuss how to handle that issue on Thursday. NSF believed that short-range planning (FY93-FY94) would have to be done assuming six international partners. In response to a further question from Austin, Heinrichs said that there would be a 7% increase in international partner dues in FY94. Austin noted that there would probably be only a 4% increase in the US contribution during the same year. He asked about prospects of a greater-than-inflationary increase in the US contribution. Heinrichs replied that it was the consensus of the US community that continuation of ODP would be on the basis of modest increases at renewal. Increases could be reviewed in any given year. Emphasizing the discrepancy between LRP projected budget estimates and the actual budget, Austin asked when such a decision would be made. Heinrichs said that NSF would make its decisions compatible with the international partners, adding that the LRP was not a NSF plan but a JOIDES plan. JOI, Inc., with advice from JOIDES, generated the Program Plan and NSF reacted to that.

ADJOURNMENT

Joint meeting of ODPC and JOIDES EXCOM was adjourned at about 5:00 PM.

JOIDES EXCOM
Wednesday, 17 June 1992

EXCOM Executive Session

534. Initial Business

Opening Remarks

Maxwell brought the meeting to order at 9:00 AM. He stated that actions had been taken on Monday to start ODP on a new course. Today, EXCOM would see if those actions could be molded into a longer-term plan. Baker explained that JOI-BOG would meet after lunch, if EXCOM had completed its business by noon. EXCOM members were invited to attend the JOI-BOG meeting.

Approval of Minutes of Previous Meeting

Dürbaum noted that the stated depth reached by KTB on p. 29 of the minutes of the January 1992 EXCOM meeting should be over 5 km, instead of 0.5 km. There were no further corrections to the revised draft minutes.

<u>EXCOM Motion</u>

EXCOM approves the minutes of the 14-15 January 1992 meeting of EXCOM in Bonn, Germany, with modification as noted.
Motion Dorman, second Nowell Vote: for 16; against 0; abstain 0; absent 1

535. Ocean Drilling Program, Recent Past, Present and Near-Term Future through 1993

FY93 Program Plan and Budget

Pyle briefly recapped the previous day's discussion of changes to the FY93 Program Plan. Leg 148 would be Hole 504B and Leg 149 would involve a single deep hole. In addition, the FY93 budget had been reduced by $400,000 to the six-partner BCOM level. The money had been taken from DCS. Maxwell said that EXCOM would hear the BCOM report before voting on the Program Plan.

Budget Committee Report

Briden summarized BCOM's actions, referring to the BCOM report (Agenda Book, white pages 39-41) for details. BCOM had worked on two profiles: 1) LRP budget figures and 2) a six-international-partner scenario (i.e., $43.2M for FY93). Cutting back to $43.2M meant that virtually all DCS, computers and shipboard equipment funds would be lost. In addition, ODP-LDGO items were already frozen. This essentially was the base budget plus a little extra.

The last part of the BCOM report considered long-term issues. The higher target figure ($45.3M) was just adequate to meet stated goals. The cut back to $43.2M was a short-term solution that would not address long-term problems. The long-term financial prospects for ODP were uncertain at best.

Discussion

Bogdanov said that Russia could pay part of its membership with, e.g., an icebreaker. The budget for an ice support vessel was $1.185M. Russia had an icebreaker for $600,000/month. Austin commented that ODP would probably need an ice support vessel for two months (Leg 151). Bogdanov said that the icebreaker could be funded half in roubles and half in dollars. That could be the Russian contribution. Heinrichs responded that he would have to look into the ramifications of that. Westgaard asked whether a contract had already been made for an ice support vessel. Rabinowitz replied that a RFP had been sent out, but that no contract had yet been signed. Bogdanov said that the Russian shipping company would need a reply by the end of August. Maxwell asked NSF and ODP-TAMU to look into the ramifications of the Russian offer. Rabinowitz stated that ODP-TAMU would have to request competitive bids and check the specifications of the ship. Austin noted that BCOM had viewed the figure of $1.185M for an ice support vessel as high and wanted a lower-cost vessel, if possible. Briden agreed, adding that BCOM felt that $800,000 was a more realistic figure. That was <1/3 of an international subscription, so that even donation of an ice support ship did not make up the full Russian subscription. Helsley stated that this was outside the sphere of EXCOM. MOUs governed this type of activity and NSF and Russia would have to work it out. Maxwell suggested that ODPC consider the issue. Heinrichs replied that it would.

Dürbaum felt that EXCOM must take up again the issue of achieving a step increase in ODP's budget. The current level of funding was too low. Maxwell was sympathetic. The budget was meagre. All that EXCOM could do was to approve a Program Plan within the budget. Somehow extra funding must be acquired, from NSF or the international partners. It was an ODPC matter. Heinrichs responded that ODPC would discuss the issue. The FY93 budget request had been written in 1991 and went to the US Congress in 1992. NSF had no flexibility except for FY94 and beyond. If the FY93 NSF contribution was increased, the money would have to come from elsewhere in the US effort. Baker added that there were two ways to get more money: 1) international partners to agree to a slow increase in contributions over the life of ODP, which was an ODPC matter, and 2) new partners. The latter was on the agenda. Heinrichs noted that a third option was to restore funds from Russia. EXCOM came to the following consensus.

<u>EXCOM Consensus</u>

EXCOM endorses the FY93-FY96 Program Plan with the FY93 Program Plan as modified by PCOM at its April 1992 meeting.

OTHER NEAR-TERM PLANNING AND ACTIONS

Austin stated that PCOM would like EXCOM input on the following items: 1) discussion of planning meetings, possibly a modified COSOD in 1993/1994, which would provide input to the advisory structure; 2) funding for additional platforms [PCOM felt that it had done as much as it could on this issue without extra funds]; and 3) funding for site-specific surveys for legs already on the drilling schedule (as there was currently no facility within ODP to conduct such surveys, e.g., high-resolution seismic survey for Leg 150; such a facility used to exist). Heinrichs noted that funding for site-specific surveys had not been part of DSDP. Austin agreed, but pointed out that money for such surveys had been available in the US program. It was possible that Leg 150 would be postponed or canceled because of safety concerns. An extra survey could help.

PCOM was in the process of developing RFPs for feasibility studies for a new generation of tools for *in situ* pore fluid sampling and deep drilling (each perhaps costing $100,000), and

would like EXCOM input on whether or not such RFPs should/could be issued, given present status of ODP funding.

PCOM would receive a report on status of DCS at its August meeting. The future of computing involved an uncertain cost. SL-WG and OD-WG would also report to PCOM in August.

Discussion

Dürbaum pointed out that Germany had carried out a survey of Iberia Abyssal Plain (IAP) and was conducting one at HD. Many vessels were operating. If notified in advance, they could carry out surveys without extra funds. Perhaps notification could be the role of the international liaison to the JOIDES Office. Maxwell commented that, if a program required a large survey, it should not be on the drilling schedule. Therefore, only small surveys should be required. Blum noted that SSP had discussed this issue and heard reports from all members on planned cruises. It hardly ever worked out that a survey would be in a position to help. If a planned survey could help, proponents were usually aware of it. Dürbaum explained that an IAP survey had not been on the German schedule, but it had been carried out. Heinrichs felt that SSP and PCOM should carry out a comprehensive analysis to present to EXCOM see whether this should really be considered as a program cost. Austin felt that the need to conduct additional surveys might increase as ODP drilled more on shallow shelves (e.g., Leg 150), often prospective areas for hydrocarbons. That required a different type of survey for safety reasons, i.e., high-resolution, engineering-type seismic surveys. Austin agreed that if it got to the point where it was felt necessary to make a systematic approach to the problem, PCOM would come back to EXCOM with that approach. It might have to be folded into program cost. Austin wished to flag the issue for EXCOM's initial attention. Additional platforms were a problem. PCOM could not go further with that issue. Maxwell replied that the money ($1.8M) was not available, so the additional platform initiative could not be pursued. Extra funds must be pursued. Austin said that that was what PCOM wanted too.

Maxwell suggested postponing discussion of COSOD III until after the Advisory Structure Review Committee had reported. Heinrichs felt that COSOD III should be part of a broader plan, in 1995 or 1996, to consider the post-1998 package. Austin noted that the Briden Report asked PCOM to examine the issue. PCOM's 1993/1994 timing was flexible. The issue was folding new input into ODP in a formal way. Dürbaum proposed specifically requesting the Advisory Structure Review Committee to discuss this issue. Maxwell agreed.

Austin explained that PCOM was already discussing some of the things that the Dorman Subcommittee had requested it to discuss, but ~$100,000 was needed for RFPs to get outside input. That money would have to be taken from some other area of ODP. Huey stated that the deep drilling RFP would not be necessary. Part A of the RFP matched the planned deep IAP hole (Leg 149) and part B was the LITHP idea of a continuous crustal section. Answers had already been found in other studies recently and ODP-TAMU could research the rest. No new advances in technology would be involved.

Austin stressed that EXCOM was approving drilling of a deep hole when it approved the FY93 Program Plan. Briden felt that it seemed unusual to have made an initial decision on Leg 149 objectives, nominate co-chiefs, then change objectives. He added that he was, however, cautious of interfering in PCOM business. Austin noted that objectives had not been changed, since NARM-DPG had specified all sites. Only the order of drilling had been changed. He added that PCOM had often changed science subsequent to co-chief nomination. Briden did not accept that objectives had not been changed. Austin said that ODP-TAMU had originally been reluctant to drill the deep hole first, but that attitude had changed. Boillot recalled that PCOM had originally endorsed the NARM-DPG strategy. Austin felt that EXCOM was beginning to intrude on PCOM responsibilities. Moss felt that EXCOM should be allowed to continue

discussions on Leg 149. Maxwell stated that PCOM's decisions could be discussed by EXCOM.

Leinen suggested reviewing, for EXCOM's benefit, the process PCOM had gone through in making the change to Leg 149. Austin explained that the process was normal. PCOM continued to look at legs even while they were being drilled. Priorities had been changed many times. The FY93 Program Plan was discussed at the December 1991 PCOM meeting and PCOM endorsed the NARM-DPG report as an approach. This would involve up to 8 legs of drilling. Leg 149 was the first NARM non-volcanic leg. IAP was more ready to drill than its conjugate margin, Newfoundland Basin. Drilling of a transect of sites was endorsed as the initial approach. At its April 1991 meeting, PCOM felt that scientific returns would be improved by drilling the deep site first. All other sites would be drilled on later NARM non-volcanic legs. There was no anomaly in appointing co-chiefs and then changing priorities. Maxwell asked whether there was any need for further discussion. There was no response.

536. Ocean Drilling Program, 1993 and beyond

APPROVAL OF FY93 - FY96 PROGRAM PLAN

Pyle stated that NSF had not asked for approval of budgets for the four-year Program Plan. Budgets in the plan were, therefore, initial estimates. Given uncertainties involved, it had not been deemed advisable to change out-year budgets. There had been no change in the science plan, either.

In response to a question from Maxwell, Heinrichs said that the science plan would not require EXCOM action unless there were objections. Pyle noted that the four-year Program Plan would be revisited for further consideration each year. Briden commented that the lower budget profile in the four-year Program Plan was not the same as BCOM's lower budget profile, but the upper (seven partner) budget in the four-year plan is the same as BCOM's upper, seven-partner, LRP budget profile.

Austin pointed out that maps showing FY91 and FY92 global rankings revealed a progressive focus of proposals on the North Atlantic and eastern Pacific. PCOM was concerned because, although ODP was a global program, proposal distribution might dictate that *JOIDES Resolution* stay in the Atlantic and eastern Pacific for many years. Maxwell suggested that that might be remedied by PCOM being more proactive. Eaton felt that a global program did not require that the drillship had to be in every ocean every year. Briden thought that the changing pattern of proposal distribution vindicated the decision to move *JOIDES Resolution* to the Atlantic. Austin replied that the distribution of new proposals was a response to four-year planning by PCOM. Heinrichs commented that such changes in distribution had occurred before and been discussed before.

ACTIONS ON BRIDEN REPORT

Maxwell explained that some items had not been voted upon during Monday's discussions, i.e., ODP-TAMU being Science Operator at least until 1998 and whether to compete the Site Survey Data Bank. Monday's actions broke into two groups: those concerning the period up to 1998 and those concerning post-1998 activities. They provided a mechanism to get changes in motion (e.g., it would be necessary to begin early if the Science Operator was to be competed in 1998). In addition, one of Monday's votes (on shipboard computer upgrades) did not achieve the required $^2/_3$ majority and EXCOM would need to return to that motion.

In response to a question from Moss, Dorman said that there had been no expressions of interest in bidding for the role of Science Operator prior to 1998. Austin noted that the Dorman Report linked *JOIDES Resolution* to ODP-TAMU's status as Science Operator until 1998 and EXCOM would have to vote on both. EXCOM passed the following motion.

EXCOM Motion

ODP-TAMU will remain Science Operator, with *JOIDES Resolution* as the primary platform, through the first phase of renewal.

Vote: for 17; against 0; abstain 0; absent 0

Maxwell added that this motion did not preclude use of additional platforms.

Moving to the issue of the Site Survey Data Bank, Moss recalled that he had proposed on the previous day that the Site Survey Data Bank should be competed whenever the data were in digital form, rather than waiting until 1998. Advantages of competition were potential for internationalization and also to obtain the best service at least cost. ODP-LDGO had done a good job since 1975, but it seemed prudent to open the Site Survey Data Bank to competition. Riddihough noted that expressions of interest had been requested in other aspects of ODP and the same could be done for the Site Survey Data Bank. That still did not commit EXCOM to proceeding with a RFP. Austin agreed, but cautioned that costs would be involved if EXCOM were to stipulate that the Site Survey Data Bank digitize its data. Eaton commented that it had been ODP-LDGO's understanding that the community preferred working with hard copies. That question should be put to the community. Dürbaum explained that the Dorman Subcommittee had received one expression of interest in the Site Survey Data Bank, but two strong panel endorsements of the present operation. The subcommittee had, therefore, proposed leaving the Site Survey Data Bank at ODP-LDGO until 1998. That could be changed to 1996, but Dürbaum felt that the Dorman Subcommittee recommendation should be endorsed.

Leinen asked how long it would take to digitize Site Survey Data Bank's data. Austin replied that that would depend on cost. Digital data could be requested from proponents, mostly within a year. Blum emphasized that SSP used hard copies and increasingly met at ODP-LDGO. Hard copies were needed. Heinrichs stated that relevant issues would have to be examined before data were digitized. He recommended against trying to force action before 1993. He asked whether it was even beneficial to digitize. Maxwell agreed. He suggested that the Site Survey Data Bank remain at ODP-LDGO until PCOM had examined the problem and any recommendations regarding changes had been made. Austin reminded EXCOM that the science advisory structure had already recommended leaving the Site Survey Data Bank at ODP-LDGO. He favored the statement of interest approach for comparison purposes. Helsley recalled that the approach adopted at the January 1992 EXCOM meeting had been to solicit statements of interest. Statements of interest in the Site Survey Data Bank should be sought immediately and not left indefinitely. Briden accepted the Dorman Subcommittee recommendation and did not envisage changing his opinion while key data were in analog form. EXCOM could revisit the issue in 1996.

Baker stated that there were two questions: 1) what does the community want in the Site Survey Data Bank? and 2) where should it be? A survey of community opinions must be sought before EXCOM made a decision about location. Austin stressed that EXCOM had already had some feedback from the advisory structure. PCOM would endorse the positions of SSP and PPSP. In addition, it was currently specified that hard copies were submitted to the Site Survey Data Bank. The Site Survey Data Bank was not the culprit. That was how the data were used. The form in which data were submitted could be changed. Eaton added that ODP-LDGO would respond positively to such a move. Heinrichs felt that broader issues should be

defined first. Maxwell agreed. There would eventually be a need to adapt to looking at data on screen, but the issue should be deferred until that need arose. Eaton noted that the Site Survey Data Bank was a service and it seemed to be performing well. He added that there was a human side, citing great anxiety at LDGO, which was located in an area of high unemployment. The Site Survey Data Bank was not broken and should not, therefore, be fixed. Rabinowitz stated that LDGO had been chosen originally as the location of the Site Survey Data Bank because it had a huge, preexisting data repository, beyond site survey data. Maxwell agreed, but added that techniques changed and all data might be used electronically one day. That remained, however, in the future and the Site Survey Data Bank should be left as it is until different plans were better defined.

Austin suggested that, as a possible solution, the DH-WG Steering Committee could consider the flow of site-related data. It would meet later in July. Dorman agreed. Moss suggested that Austin draft a motion to that effect.

Maxwell returned to the issue of the motion that had failed to pass. *(ODP-TAMU as Science Operator to manage shipboard computer operations and implement upgrades, as per IHP/PCOM tasking, via international competition.)* Eaton asked for clarification of the role of subcontracts open to international competition. He suggested a wording change *(... and further to implement upgrades...)*. Dürbaum stressed that the Dorman Subcommittee had been told that ODP-TAMU was aware of the deficiencies and were separating the computer department. Perhaps that should be explicitly stated. Rabinowitz stated that ODP-TAMU was combining its data base and computer management groups. Dürbaum suggested adding *...integrate all shipboard...* to the motion. Eaton said that brought the logging computer under ODP-TAMU management. Maxwell agreed. Baker felt that someone had to have oversight, but that ODP-TAMU would not dictate to the logging personnel what kind of equipment should be used. It was a management and integration process. Rosendahl asked about implications for DataNet. Eaton was not sure. He suggested using "integrate" instead of "manage" in the motion. Maxwell felt that shipboard computer operations had to be managed. Briden, however, said that ODP-TAMU was already managing shipboard computing. The new aspect was integration of new systems. EXCOM passed the following motion.

<u>EXCOM Motion</u>

ODP-TAMU as Science Operator to integrate all shipboard computer operations and further to implement upgrades, as per IHP/PCOM tasking, via international competition.

Vote: for 13; against 4; abstain 0; absent 0

Modifications of the terms of reference of the Advisory Structure Review Committee were briefly discussed. Heinrichs, Dürbaum and Briden supported requiring the review committee to consider input from all JOIDES members, in addition to PEC III and the Briden and Dorman reports. Maxwell cautioned that the review committee had a task to perform and that task should not become too much of a moving target. Dürbaum said that the various national committees of the international partners could send their recommendations to the chair of the review committee via the EXCOM Chair. Maxwell agreed. *(Note: these suggestions are incorporated in the motion previously recorded in these minutes, p. 27.)*

Discussion returned to the issue of the Site Survey Data Bank. Austin presented a draft motion on having DH-WG Steering Committee address site survey data. Dürbaum stated that it was known that what was needed were hard copies of data. He did not see any need to consider conversion of data to digital form. Austin felt that it was necessary to consider the issue of a digital Site Survey Data Bank prior to considering any move. Maxwell felt that the motion should include a statement to the effect that the Site Survey Data Bank would remain at ODP-

LDGO until these issues had been decided. Leinen thought that could be included in a follow-up motion. Eaton did not wish the motion to be worded in such a way as to suggest that, in the event of a change, ODP-LDGO was not capable of implementing it. Helsley stressed that it should not be implied that EXCOM felt that digitization was necessary. The Site Survey Data Bank needed to be examined more broadly. Rabinowitz felt that that had been done. SSP had reviewed the requirements of the Site Survey Data Bank and concluded that the existing procedures were best. Dürbaum added that SSP was the group that knew best what was needed. Duce suggested simply voting on the Dorman Subcommittee's recommendation to leave the Site Survey Data Bank as it was. Dürbaum agreed. Maxwell also supported leaving the Site Survey Data Bank as it was until there were reasons to consider changes. That left matters open to change. Briden suggested using the wording of the Dorman Report (Agenda Book, white pages 130-131). Eaton felt that that wording could apply to other aspects of ODP besides the Site Survey Data Bank. Moss thought that there was no need to include a statement that EXCOM would revisit the issue if it was true that data in digital form were not needed. Briden, however, noted that things might change. Austin cautioned that the Site Survey Data Bank holdings would, in the meantime, grow in analog form, unless PCOM was asked to review the situation. Maxwell stated that EXCOM was not asking PCOM to look into the issue. EXCOM passed the following motion.

<u>EXCOM Motion</u>

Given the general satisfaction with its services and current heavy reliance upon experienced staff and hard copy holdings, EXCOM concludes that the Site Survey Data Bank contract should not be competed now. As the second phase of the renewal period approaches, this conclusion should be revisited.

Vote: for 14; against 2; abstain 1; absent 0

Maxwell stated that the recommendations arising from the Briden Report were somewhat disorganized. He suggested that JOI, Inc. be given the task of placing them in a time sequence so that EXCOM could consider them in January 1993. Maxwell asked if Eaton wished to comment further on ODP-LDGO's views on carrying out the logging subcontract during FY93.

Eaton explained that ODP-LDGO had six staff vacancies in its logging group. It was difficult to hire log analysts short-term. (That might be easier for ODP-TAMU by virtue of its proximity to Houston.) The issue was job security. ODP-LDGO had received an expression of interest in a tenure track position, but ODP-LDGO could only guarantee the position for 15 months, if the logging subcontract moved elsewhere at the end of FY93. Eaton felt that he could not hire someone under those terms. LDGO had 100 research scientists, of whom 71 were entirely supported by soft money. It would be detrimental to scientists' careers if the logging operation was reduced to managing a technical service (i.e., a minimum logging operation). In BCOM's proposed Wireline Services Operator budget (Agenda Book, white pages 38-39), there was a reference to a negotiated one-year extension of a previously-applied Columbia University overhead rate of 42%. Eaton did not know what R. Anderson had said at BCOM and the wording was unclear. In any event, that extension had not yet been negotiated with Columbia University (the regular overhead rate was 74.5%) It would be a battle to get the lower overhead rate from Columbia University, which had an operating deficit. The university would be unwilling to underwrite ODP-LDGO's taking on the logging operation. Eaton, therefore, had concerns about a short-term extension (FY93). It would constitute a sacrifice for LDGO, especially since the logging operation was now just a technical service. ODP-LDGO, however, had a moral obligation to ODP and the DataNet partners.

The available options for FY93 were: 1) to allow ODP-TAMU to take over the logging operation, 2) for ODP-LDGO to engage, at no increased cost to ODP (at least for the first

year), in some limited form of DataNet Phase I (the current logging operation), i.e., to reach out from ODP-LDGO to Marseille, Karlsruhe and Leicester, thereby avoiding the problem of not being able to fill positions at ODP-LDGO (the group would then collectively tender for the long-term contract), or 3) ask Schlumberger France to take on the whole logging operation. Eaton asked whether it was in the best interests of LDGO to agree to underwrite this cut-rate extension. The difference between overhead rates of 42% and what it was really costing would have to be made up with LDGO endowment money. LDGO was in effect being asked to do something that NSF would not do, i.e., provide more money to ODP. It was not logical for ODP-LDGO to do this, but it had made agreements with other partners and would be prepared to consider entering DataNet Phase I with France, Germany and UK.

Maxwell acknowledged the difficulty of hiring personnel short-term, but added that that was unfortunately a common problem. Briden commented that Eaton had provided a useful perspective. He wondered whether the footnote to the EXCOM motion on tendering logging, to the effect that specified options for enhancement to the basic SOW could be included as part of the tender, would help encourage ODP-LDGO to bid. Also, would it give ODP-LDGO incentive to carry through for FY93 in the new mode (i.e., recruiting in Marseille). Eaton replied that, if that was the view of EXCOM, then ODP-LDGO would proceed to negotiate a DataNet Phase I partnership with France, etc. He would still have to convince Columbia University to allow the 42% overhead rate. Dorman stated that DataNet Phase I was fully commensurate with tasks currently required of the Wireline Services Operator until October 1993. How the current subcontract was implemented (i.e., hiring in France) was up to ODP-LDGO. Dorman was concerned with the high costs of later phases of DataNet. Eaton acknowledged that, adding that only Phase I was under consideration at present. Duce stated that another option would be for ODP-TAMU to take over the logging operation for FY93. It could be done with zero overhead and release funds for computing. Work could still be subcontracted to France. ODP-LDGO could still bid for the long-term logging contract.

Maxwell noted that the logging operation was a contract written between JOI, Inc. and ODP-LDGO. He would leave it up to JOI, Inc. to negotiate with ODP-LDGO and ODP-TAMU to ensure that logging operations were conducted during FY93. Austin expressed concern at the prospect of leaving the meeting without a decision. There had been some feedback that day-to-day logging was not being handled well. Eaton responded that this meeting was the first occasion when such discontent had been reported to him. Maxwell still felt that it was a JOI, Inc. matter. Eaton reminded EXCOM that no contract had yet been signed for FY93 (beginning October 1992). Maxwell said that ODP needed logging during FY93 and urged Eaton to work with JOI, Inc. and ODP-TAMU to ensure logging. Eaton responded that the first step was to try to get a 42% overhead rate from Columbia University. If he was successful in that, there would be two options: to reconfigure the present operation to include international partners, or to allow ODP-TAMU to take over until logging was tendered. Eaton added that ODP-LDGO would compete vigorously at that stage. Briden stated that what mattered to EXCOM was "the bottom line," maintaining the logging operation budget at the level of the BCOM report.

Boillot outlined the French position. France had expressed its interest in participating in logging and would bid when logging was tendered, perhaps individually, but probably with partners. French logging personnel agreed, in a general way, with the ODP-LDGO proposal. France agreed with the main conclusions of the Dorman Subcommittee. A possible compromise would be to extend terms of reference, which might be too restrictive in EXCOM's motion. Logging must be continued, but internationalization was also required. ODP-LDGO's proposal was possibly a first step, but international tendering was essential and should not be delayed. Dorman suggested that JOI, Inc. talk to DMP about the options they wanted so that these could be explicit when tendering for the basic logging operation.

Dorman noted that EXCOM had not voted on recommendation f) of the Dorman Subcommittee, concerning engineering and engineering development. He felt that a vote was not necessary, but development environment for third-party tools was one of the major deficiencies identified by the subcommittee. Dorman suggested that PCOM be urged to ask DMP for guidance and direction. Some contractual arrangements would have to be made and Dorman preferred it to be tendered separately from the recommendation b) and c) tender (i.e., logging). There was no necessity that they be linked. Guidance was needed from the advisory structure. Austin replied that the advisory structure might not be configured to provide answers and that, in any case, the Advisory Structure Review Committee would be considering those issues. (See also EXCOM Consensus, p. 25.)

Boillot asked when a final decision would be made on logging. Maxwell replied that JOI, Inc. would negotiate with ODP-LDGO for the period October 1992 to October 1993. If ODP-LDGO was unable to carry out the logging subcontract, ODP-TAMU would take over. Logging operations beyond FY93 would go to tender (for basic logging and specified options). Boillot stressed the importance of a rapid schedule for tendering. Eaton said that he would discuss developments with Boillot as soon as possible after discussions with Columbia University in the context of the LDGO/French agreement.

ACTIONS ON PEC III REPORT

Baker recalled that PEC III had been appointed in April 1991 and had reported in December 1991. PEC III had made six major recommendations. 1) Publications: papers currently published in Scientific Results volumes should be published in the open literature. 2) Public relations (PR) should be improved. 3) Shipboard operations were good, but the drillship was overcrowded. 4) Review of the JOIDES advisory structure (EXCOM had agreed to the terms of reference, but names of Advisory Structure Review Committee members were needed). 5) COSOD objectives: this had been added to the terms of reference of the Advisory Structure Review Committee. 6) Site surveys: these were on EXCOM's agenda (Agenda Book, yellow page 11). Baker added that all items were being addressed.

Maxwell asked that JOI, Inc. comment on PR. Pyle replied that NSF had asked JOI, Inc. to put together an analysis of what was currently done. It was fairly extensive, but perhaps not enough. Since there were insufficient funds for DCS development, etc., it was felt inadvisable to push PR harder. JOI, Inc. could act if EXCOM felt it important. A decentralized approach had been used to date, with each subcontractor and international partner on its own. If necessary, the effort could be more centralized.

Dorman felt that the first step need involve no cost. Most US JOI institutions had PR people. JOI, Inc. could appeal to that group, explaining the need for enhanced publicity. Dürbaum asked whether the primary target of the publicity was intended to be the scientific community or the general public. If the general public, the effort would have to be made separately by individual international partners. He disagreed with PEC III, adding that their statement had been too general. Maxwell responded that the intended target was the general public. Rabinowitz noted that ODP-TAMU had initiated contacts with museums (e.g., St. Petersburg, Florida, and the Schlumberger museum in Paris). Maxwell asked that JOI, Inc. canvas JOIDES members to determine what they were doing in PR. Pyle replied that NSF had already requested that.

Leinen felt that PR could be a "black hole". It was necessary to define what the expected result was, i.e., whether it was just to expand awareness of ODP, or to increase contributions from international partners. Maxwell stated that JOI, Inc.'s analysis should be sufficient for now.

Maxwell asked what had been done to address PEC III's charge that the drillship was overcrowded. Rabinowitz noted that PEC II had said the same. There were two levels of overcrowding. One was in cabins. It would be impractical to sail smaller scientific parties. Rabinowitz stressed that PEC III had not heard the complaint from shipboard scientists. The other area of overcrowding was in laboratories. There had been modifications to the core laboratory, but there was no more space available aboard *JOIDES Resolution*. Maxwell reported that Winterer (Leg 143 Co-Chief) would have preferred a smaller shipboard scientific party. That, however, would infringe international requirements. Rabinowitz added that ODP-TAMU had been told to sail more personnel. Austin pointed out that PCOM had requested that more technicians be sailed, but at the expense of the US scientific party. Maxwell stated that ODP-TAMU should take from PEC III's recommendation that, if there was a way to reduce the number of shipboard participants, that should be done. Austin suggested reducing the number of scientists by more than the number of additional technicians.

Maxwell moved on to consider the Advisory Structure Review Committee. The terms of reference had been approved, but a list of names was needed. Some were listed in the Agenda Book (white page 160). Maxwell asked for additions. Dorman said that he had given a list to Baker. Baker reported that it had been suggested that a member of PEC III be involved, e.g., J. Francheteau or M. McNutt. Dürbaum highlighted the need for people with technology skills. Baker agreed, adding that the following had also been suggested: L. Silver, R. Coleman, S. Uyeda, A. Hoffman and C. Allegre. That list still lacked engineers and technologists and they were needed to make recommendations about TEDCOM. Austin noted that P. Worthington was about to leave the science advisory structure. Maxwell suggested Dürbaum, since he would no longer be active on EXCOM after this meeting. Austin proposed L. Garrison. Huey suggested A. McClaren. Heinrichs felt that D. Scholl (on list, Agenda Book, white page 160) had probably not been involved in the issues enough to be included. Maxwell suggested M. Zoback. He proposed that Dürbaum be Chair, because he knew the issues. Then Baker could consider the list of names. Briden felt that the choice of Dürbaum as Chair was an excellent suggestion. He also strongly supported B. Biju-Duval, P. Worthington and L. Garrison. He said that McNutt should then be chosen instead of Francheteau, because Biju-Duval was also French. Maxwell asked that any additional names be given to Baker as soon as possible, especially engineers. When eight had been selected, EXCOM would be informed. Dürbaum would be Chair.

Maxwell stated that the next PEC III item involved more proactive planning. Austin referred to his statement in the Agenda Book (yellow pages 10-11). He felt that ODP was becoming more proactive anyway and that no further action need be taken, especially since the Advisory Structure Review Committee would also consider the issue.

Maxwell asked Rabinowitz to comment on the issue of stress and low morale among technicians. Rabinowitz explained that ODP-TAMU had taken the following steps to correct the situation: 1) addition of shipboard technical staff (one FTE/cruise); 2) two computer specialists were now sailing on each cruise on an A, B, C rotation (as opposed to A, B); and 3) technicians no longer had to live in College Station between legs. There had also been changes in middle management. Rabinowitz agreed with the importance of the technical staff. Post-cruise performance reviews generally praised the technical staff. When that had not been the case, ODP-TAMU had taken corrective measures.

Moving on to consider site-survey funding, Maxwell noted that there were two elements to the problem: 1) communicating with international partners to take advantage of their survey cruises, and 2) providing some funds for site surveys within ODP. Austin explained that PEC III had felt that institutions with geophysical capabilities had competitive advantages in writing proposals. Maxwell stated that research vessels in the US and elsewhere were available to the

entire scientific community. Austin felt that ODP already tried to bring people with data together. Maxwell thought that no more could be done in view of funding constraints.

Maxwell stated that the final PEC III recommendation was that JOI, Inc. contingency funds be continued. Heinrichs responded that NSF endorsed JOI, Inc.'s continued provision of those funds. Maxwell said that that was between JOI, Inc. and NSF.

Dorman raised the issue of publications, recalling that the Dorman Subcommittee had recommended that IHP consider enhancing the amount of digital data in Initial Reports volumes. Austin responded that that was being done.

537. Old Business

MOVE OF THE JOIDES OFFICE TO UNIVERSITY OF WASHINGTON

Maxwell explained that the JOIDES Office would move, as of 1 October 1992, from the University of Texas at Austin, Institute for Geophysics to the University of Washington, College of Ocean and Fishery Sciences. The University of Texas JOIDES Office would prepare the minutes of this meeting and the University of Washington JOIDES Office would prepare the Agenda Book for the next EXCOM meeting (January 1993). Maxwell added that he would be EXCOM Chair until 1 October 1992, but that this was his last EXCOM meeting as Chair. The August 1992 PCOM meeting would be chaired by Austin and the December 1992 PCOM meeting by B. Lewis. Some JOIDES Office files were already being shipped to the University of Washington and Maxwell wished the new JOIDES Office well. Canada had nominated W. Collins as Executive Assistant and non-US Liaison. There were no other nominations. EXCOM should approve the nomination. Pyle noted that the non-US Liaison was a JOI, Inc. employee and that JOI, Inc. and Collins had yet to reach an agreement. Collins might yet withdraw. Maxwell stated that if EXCOM took a vote, JOI, Inc. would have authorization to conclude negotiations. EXCOM passed the following motion.

<u>EXCOM Motion</u>

EXCOM approves the nomination by Canada of W. Collins as JOIDES Office Executive Assistant and non-US Liaison.
Motion Dorman, second Briden Vote: for 16; against 0; abstain 0; absent 1

Austin reported that the new JOIDES Office Science Coordinator (US representative) would be K. Schmitt. Dürbaum asked how EXCOM would proceed if Collins did not accept. There would be little time in which to take action. He suggested that other names should be provided. Pyle responded that that was why he had raised the issue. EXCOM members should keep thinking about potential nominees and perhaps make suggestions. It would be necessary to move fast if Collins withdrew. Austin noted that ESF was next in the rotation after C-A. Westgaard said that ESF could try to locate a nominee. Austin stressed that the job was substantive and would require the candidate to be "up and running" on 1 October. Briden asked about work permits. Pyle replied that they could be a problem. Dürbaum stated that Germany might have a nominee.

BUDGET COMMITTEE MEMBERSHIP

Maxwell noted that BCOM presently comprised Briden (Chair), Dürbaum, Nowell, Austin and Lewis. Dürbaum was, however, leaving EXCOM. In addition, the current EXCOM Chair was historically not a BCOM member. Nowell would, therefore, also have to be replaced. Austin

explained that BCOM met once per year, usually in March. Dürbaum added that each member paid travel costs. Riddihough and Rosendahl were approved by acclamation.

POTENTIAL NEW ODP PARTNERS

Baker said that it was necessary to consider how to proceed to get new international members of ODP and how to obtain funds to support Russian membership. Baker stated that nobody had actively traveled to any potential partner countries, with a view to signing them up, during the last year. He asked whether that should be done. The importance of increasing ODP's budget had been stressed at this meeting. Increases in subscriptions and incorporation of new members were two ways to get additional money into ODP. Potential new members included a consortium of Asian countries and the IOC consortium of developing countries (using World Bank funding).

Austin asked about South Africa, where the political situation was improving. Baker replied that JOI, Inc. would develop and enact a plan if EXCOM approved. Eaton proposed that EXCOM ask JOI, Inc. to pursue a plan to develop new membership and report to EXCOM before it was implemented. Heinrichs stressed that new members would need a science structure able to support a global program. NSF did not see how to incorporate Asian countries. The individuals who had expressed interest were not at a high policy level. He had had no contacts with South Africa, but felt that it might not have a sufficiently large scientific community. Austin responded that there was a significant community there. Maxwell stated that EXCOM was merely asking JOI, Inc. to put together a plan. JOI, Inc. would consult with NSF. Heinrichs added that the IOC idea was a training/education idea. Rosendahl suggested South American countries and an approach to the Tinker Foundation. Austin replied that the Tinker Foundation had not been interested when he had applied previously. EXCOM passed the following motion.

<u>EXCOM Motion</u>

JOI, Inc. should formulate a plan to increase the number of international members of JOIDES and report to EXCOM prior to its implementation.
Motion Eaton, second Leinen Vote: for 16; against 0; abstain 0; absent 1

538. New Business

ACTIONS REQUIRED FROM JOINT ODP COUNCIL - EXCOM MEETING

Maxwell stated that these actions had already been handled.

539. Future Meetings

The next meeting of EXCOM will be on 27-28 January, 1993, with the JOI Board of Governors meeting on January 16, 1992. Falvey explained that the venue would be Coff's Harbour, a beach resort in northern New South Wales, approximately equidistant between Sydney and Brisbane. Attendees could arrive at either Sydney or Brisbane. Coff's Harbour was ~1.5 hr flying time from Sydney and ~1 hr flying time from Brisbane. Rates would be all-inclusive. All rooms were suites (one bedroom plus living room). Rates were $160/day, or $100/day if sharing. In order to reserve the correct number of rooms, Falvey needed to know individual EXCOM members' choices from alternatives of twin share, single, or single plus spouse. A Seminar would be held on Monday, 25 January (Tuesday 26 January was an Australian holiday). The meeting would last for 2-3 days. Baker added that the meeting

traditionally involved 2 days of work plus a field trip. Maxwell stated that JOI, Inc. would send a fax to EXCOM members with details.

Duce reported that several people had expressed interest in visiting ODP-TAMU. ODP-TAMU would, therefore, be prepared to host the June 1993 EXCOM meeting. May would be better than June for ODP-TAMU. Heinrichs recalled that EXCOM had met at ODP-TAMU once before, adding that dates must be known. Duce stressed that the meeting could not be held within 2 weeks of a port call. Mid-May was, therefore, best. Austin, however, pointed out that JOI, Inc. would be unable to modify the Program Plan by mid-May if PCOM changed it in April. Pyle agreed, if the changes affected the budget. He preferred June. The meeting was scheduled for 22-24 June 1993, at College Station, Texas.

540. Adjournment

Maxwell thanked the host, Baker, and JOI, Inc. Heinrichs noted that, in addition to Dürbaum, Westgaard was also leaving EXCOM. EXCOM expressed appreciation for their work by applause. Briden thanked Maxwell for his work as chair of EXCOM, and the UTIG JOIDES Office.

The meeting was adjourned at 1:00 PM.

APPENDICES ATTACHED TO THE 15-17 JUNE 1992 EXCOM MINUTES

1. Recommendations of the Briden Report
2. Report of the *ad hoc* Subcontracting Subcommittee (Dorman Subcommittee)
3 Evaluation of the French Participation in the Ocean Drilling Program - Principal Conclusions and Recommendations.
   (Attachment: list of French ODP-related MCS surveys.)
4. JOI/USSAC Report to EXCOM
5. Letter from A. Maxwell to B. Lewis, re: PCOM comments on Briden Report

HANDOUTS DISTRIBUTED AT THE 15-17 JUNE 1992 EXCOM MEETING

1. Recommendations of the *ad hoc* Subcontracting Subcommittee (Dorman Subcommittee)
2. Report to EXCOM on DCS (JOI, Inc.)
3. Program Management Report, Supplemental Information
4. Science Operator Report
5. Wireline Logging Services Report—DataNet Proposal Summary
6. Letter from A. Maxwell to B. Lewis, re: PCOM comments on Briden Report
7. Terms of Reference for JOIDES EXCOM
8. Deep Sea Drilling Vessel System (Japan)
9. United States Country Report

Recommendations of the Briden Report

33. RECOMMENDATIONS

Relation of ODP to international science

(i) The sciences that are served by ODP would benefit from regular open scientific conferences on the Scientific Contributions of Ocean Drilling. EXCOM should explore the advantages of holding them during IUGG General Assemblies, and ways of achieving feedback into the JOIDES advisory structure (paragraph 6).

(ii) Bilateral liaison and co-ordination with relevant international scientific programmes should continue to be developed on the lines of existing coordinations with FDSN and JGOFS. This mechanism should also be used to link with national drilling or coring programmes (paragraph 6).

(iii) Consideration could be given to renaming ODP the International Ocean Drilling Programme (paragraph 7).

Governance of the Programme

(iv) NSF/JOI should investigate the internationalisation of JOI Inc. to include non-US institutions as full members (paragraph 13).

(v) EXCOM should be consulted on the question of the JOIDES office being located in non-USA institutions and JOI should be asked to ascertain the financial implications (paragraph 13).

Role of Subcontractors

(vi) The split of the Science Operator contract should be carefully considered to see how central functions can be separated from specific ship support functions. If this is feasible, then the Science Operator contract should be sub-divided with effect 1 October 1993 into a contract for ship-support functions plus one or more contracts for Central or Specialised Services (paragraph 12).

Tendering for Subcontracts

(vii) The Wireline Logging Operation for October 1993 onwards should be put to international open tender for a five year contract (paragraph 12).

(viii) The Science Operation is too big and too complex for fair open international tender to be mounted for the Contract(s) from October 1993 onwards. However, all members should be offered the

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opportunity to tender for (at least) the Central Services sub-contract(s) from 1995 (see (v) above). Expressions of interest should be invited by 31 December 1992 or shortly thereafter. In the event that no competition is notified, the sub-contract(s) from 1993 should be offered to TAMU for 5 years. If notice of competitition is given, interim contracts for 2 years should be offered to TAMU (paragraph 12).

(ix) EXCOM should consider whether to treat the part of the Science Operator sub-contract that relates to support of JOIDES Resolution in the same way as in (viii), taking account of the factor that the SEDCO (Underseas Drilling Inc) contract for JOIDES Resolution is with Texas A&M and may therefore not be transferrable to another ODP Operator on the current favourable terms (paragraph 12).

JOIDES Advisory Structure

(x) PCOM should be reconstituted with membership of eminent non-proponent gioscientists (including the Chairs of Service Panels) and with its Terms of Reference changed to promote stronger pursuit of paramount themes, and to encourage proactive invitation, combination or variation of proposals (paragraph 22).

(xi) The structure and Terms of Reference of Thematic Panels should be examined with the aim of better reflecting the major themes of future science (paragraph 22).

(xii) EXCOM should discuss whether changing the basis of membership of all components of the Advisory Structure would strengthen the Program. (There are various issues (arising, for example, from paragraphs 6 and 15) such as representation on the basis of expertise rather than institution; USA/non-USA balance; but I have not been able to assess how important or urgent they are. Incidentally, I regard the question of USA non-JOIDES institutions to be a matter for USA).

Incorporation of new vessels

(xiii) ODP should announce terms and procedures under which ODP will consider proposals for changing the balance of the program and incorporation of new vessels (paragraphs 9, 15, 26, 27).

(xiv) PCOM should be encouraged to propose ad hoc legs using platforms other than JOIDES Resolution, interactively with the search for funds for such ventures (paragraph 23).

(xv) EXCOM (with advice from Advisory Structure) must determine the scientific and technical requirements for vessel(s) from 1998 onwards (Deadline September 1994) to enable JOI to draw up an invitation to tender to be announced 1 October 1995. EXCOM should decide whether invitations are to be confined to member countries of ODP (Deadline Summer EXCOM 1995) (paragraph 31).

(xvi) EXCOM should record that it recognises that achievement of a multi-vessel programme will mark a new era in ocean drilling that may require further modification of the advisory and operational structure (paragraphs 30 - 32).

CONCLUSIONS

34. If implemented these proposals will:-

- make possible a better programme as soon as the effects of reform of the Planning process become felt;
- promote further improvement by timely incorporation of new vessels;
- enable wider distribution of shore-based subcontracts after October 1995, if members so wish;
- establish a mechanism for dealing with any definitive proposal for incorporation of new vessels, as soon as possible, and hence, in principle....
- make possible incorporation of additional vessels, as soon as any known vessel is likely to be available and its capability proven;
- enable ab initio specification of ODP ship requirements with effect from October 1998;
- enable full and open competition to provide for all of these ship requirements for ODP from October 1998;
- promote enhanced vitality of the programme by creating a New Era of Ocean Drilling to carry us into the 21st century.

J C BRIDEN
4 December 1991

APPENDIX 2

Version 3 -- May 15, 1992

REPORT OF THE ODP AD-HOC SUBCONTRACTING COMMITTEE

RECEIVED
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Ans'd

INTRODUCTION

Following the report of Dr. J. Briden on "Future Organization and Management of ODP" at the January 1992 Bonn meeting of EXCOM, an Ad-Hoc Committee consisting of Craig Dorman, Hans Durbaum and Dave Falvey was appointed and charged to:

> "Recommend to EXCOM (and via EXCOM to JOI) specific contracting options to achieve continued ODP excellence and demonstrated cost effectiveness with enhanced international participation during the ODP renewal period (1993-2003)
>
> i.e. What should be tendered for bid?
> To which offerers?
> How? When?
> How evaluated?
>
> Caveat: NSF intends sole-source prime contract to JOI, Inc. for 1993-1998."

In accordance with the Plan of Action and Milestones approved in Bonn, C. Dorman circulated a request for expressions of interest to EXCOM members on 30 January 1992 (Appendix A*). This request covered Science Operator and Wireline Logging Operations subcontracts. In response to requests of members, this letter was amended on 14 February to include the ODP Site Survey Data Bank subcontract.

Responses received by 25 February (Appendix B) were distributed by JOI to all EXCOM members.

The Ad-Hoc Committee visited Lamont-Doherty Geological Observatory (LDGO) on 27 February 1992; JOI, Inc. on 28 February; and Texas A & M University and Research Facility (TAMU) from 29 February to 2 March. During the LDGO and TAMU visits the Committee received detailed briefings on current operating procedures and discussed a range of potential contract and operating changes for the renewal period. Copies of the briefing material provided are at Appendix C.

*Appendices are available at JOI with the original copy of this report.

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At JOI the Committee reviewed responses and discussed future committee procedures. The Committee also clarified the fact that JOI plans to extend existing contracts through 30 September 1993, so that competitive offerings would indicate 1 October 1993 as the start date. At this meeting it was decided that in order to meet BCOM concerns with incremental costs of the Committee and to minimize concerns with potential conflict of interest (EXCOM had agreed in Bonn that ODP members represented by individuals appointed to the Committee would not be excluded from expressing interest and participating in any resulting competition), our initial plans of visiting all offerers could be cancelled. It was felt that visits to France and Russia were appropriate to improve understanding of their interests, particularly for the post-1998 time period. C. Dorman thanked the locations visited and notified respondees of the substance of this change in plans by letters dated 10 March 1992 (Appendix D).

On 11 April, H. Durbaum and C. Dorman as Committee representatives, along with Tom Pyle of JOI, met with a French delegation headed by M. P. Papon of IFREMER to discuss French interests. Briefing materials from this meeting are at Appendix E. The Committee representatives and Dr. Pyle were then joined in Moscow by Mr. T. L. Pettigrew of TAMU's Development Engineering Department, for a 13 April meeting at the Institute of the Lithosphere. At this meeting, chaired and coordinated by Dr. Nikita Bogdanov, representatives of the Institute of Geosystems and the Research Institute of Drilling Technology described their responses to the request for statements of interest, and Dr. G. Gamsakhurdia of the P.P. Shirshov Institute of Oceanology discussed the status of the Russian drillship. C. Dorman and T. Pettigrew remained in Moscow through 19 April for further technical discussions and tours of facilities. Briefing and descriptive material, and Mr. Pettigrew's trip report, are at Appendix F.

Since there was significantly greater specificity of expressions of interest, as well as time-pressure for competition, for the first phase of the renewal period (1993-1998), the Committee concentrated on that period. We present first our findings and conclusions for this phase, and then nine recommendations which are based upon them. A later section of this report deals with the post-1998 period.

FINDINGS AND CONCLUSIONS (1993-1998)

a. ODP Site Survey Data Bank. The Data Bank, under the management of Mr. Carl Brenner, is a service organization responsible primarily to the Site Survey Panel and Safety Panel. Although located at LDGO (since 1975) to take advantage of access to the on-line digital geophysics data base and network, much of the material stored and prepared by the Data Bank is still in analog format. While there was some interest in competing for its management, the Committee also received strong recommendations from several respondents that it remain under the current management. Given the general satisfaction with its services and current heavy reliance upon experienced staff and hard copy holdings, the Committee concludes that this contract should not be competed now. As the second

phase of the renewal period approaches this conclusion should be revisited; a shift of venue will be much easier when more of the data base is in digital format.

b. Wireline Logging Services. There was extensive interest in competing for routine at-sea operations (logging with standard industrial tools and those owned by ODP), and in extending ODP down-hole measurements and analyses. Further, both the expressions of interest and our discussions with current operators indicated a need for a revised (integrated) on board data acquisition/computing environment and core-log correlation. Routine "at-sea logging operations" is clearly an area in which competition is desirable. Further, LDGO indicated that they did not desire to continue to manage at-sea logging and on-board processing during the renewal period, so that a new subcontract is perforce required.

Many of the expressions of interest were for services that are significantly beyond those currently provided as a part of the ODP program. Examples include wide band ship to shore data links, a significantly expanded shoreside analytical network (equivalent to that described in the LDGO "Blue Book" circulated prior to the January meeting), and routine hydrogeology experiments and vertical seismic profiles. The breadth of interest in such activities convinced the Committee that expanded down-hole measurements and analyses will be increasingly important components of operations during the renewal period, and that if funding to support such activities is available there are many excellent ideas to be considered. Selection among such alternatives obviously is beyond the charter of this Ad-Hoc Committee. It is properly the responsibility of standing committees. A scientific screening and prioritization of these new suggestions, balanced by budgetary considerations, is required before any competitive process can be considered. We do note that funding of any of these activities should involve new participants in providing contractual services to ODP.

The expressions of interest and our discussions revealed another area of concern, namely the orderly development of new borehole measurement tools. As discussed further below, our general concern over engineering development applies to both of the current major JOI subcontracts and represents what the Committee considers to be a significant deficiency. The existing LDGO contract (and Policy Manual description thereof) specifies only customized state-of-the-art "oil industry" logging plus operation of certain designated special purpose research tools. It makes no provision for tool development or assistance with third party wireline tools. By default, however, and by virtue of LDGO's at-sea responsibility (from section 3 of the same Manual) for the safety and compatibility of wireline tool operations, LDGO has assumed the role of the program's borehole measurement "Development Center". The Committee believes this ad-hoc situation should be contractually rectified during the renewal period, and that properly staffed and reviewed engineering development is required by ODP. We discuss this further in our comments on the TAMU contract.

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Overall then, we conclude that the Wireline Logging Services contract must be completely restructured for the renewal period, and that there are four issues that must be addressed: "Standard" logging and on-board processing, integration of the logging and other shipboard computing and data management services, expansion of downhole measurements and analysis, and establishment of a more rigorous development environment.

c. Science Operator. While there was considerable interest by many respondees in competing for major portions of the current Science Operator contract, there also was general consensus that TAMU and its principle subcontractor SEDCO-FOREX should continue to manage and run the JOIDES RESOLUTION drilling operations through the first renewal phase. The quality of the current program, and the favorable day-rates available through 1998 via the TAMU subcontract, strongly argue against perturbing current arrangements. (During our visit, Dr. Rabinowitz notified the Committee that they had completed negotiations with SEDCO for an extension of these same day rates through 2003.) Since neither TAMU nor any other participant is interested solely in the purely mechanistic aspects of the project, and since many functions in the current contract are inextricably tied to management of the drilling operations, any competitive offering must carefully balance risk versus benefit. Indeed, during our visit TAMU stressed that communications and close liaison among the various element managers have been critical to their excellent and cost effective performance to date. The Committee concurs but believes, nevertheless, that several steps can be taken to increase international participation.

First, an expansion of repository space will be required to accommodate cores collected during the coming years. The refrigerated repository at LDGO is nearly full; and while there is adjacent expansion space, it would require a significant capital investment to move existing open stores and refrigerate it. TAMU has suggested that repositories be established in Europe and the western Pacific, and several respondees expressed interest in this part of the operations. Since some facility expansion is necessary in any event, this is a natural candidate for competition. This should occur quickly to ensure that any additional repository space is ready for cores from upcoming Atlantic legs. The Committee did find the current curation and repository services to be very well run, and believes that any additional repositories should be managed under the same basic arrangements as currently exist, namely under subcontract to TAMU. This approach will maintain consistency while encouraging broader access.

Second, the Committee believes that scientific and technical staffing of the JOIDES RESOLUTION should remain the responsibility of TAMU as the Science Operator. Although there was some interest by other ODP members in performing these functions, they are both very tightly tied to the drilling aspects of the program, and also are perhaps the single most important 'value-added' aspect of drillship management. We doubt that TAMU would be willing to manage the project should this aspect of the program leave

College Station. The Committee did note that there is currently minimal international staff at TAMU (roughly 6 out of 150 total), but believes that steps far short of competition can remedy this deficiency (and that competition in itself would not fix it).

Logistic support and development engineering are two other functions inextricably linked to drillship management. Not surprisingly, no one beside the Science Operator was interested in performing the logistic support function, although there was interest in providing supplies and services. Currently, only subcontracts and requisitions above $25K U.S. apiece (the level for which JOI approval is needed) are proferred internationally. The Committee believes that several actions can be taken to significantly increase international participation in this area.

Many respondees expressed interest in engineering. As is the case with down-hole measurements, there appear to be many excellent ideas in the community. We do not believe the program currently is well suited to evaluate these, or to implement them if and when desirable and fundable. TAMU's development engineering group is tightly targeted on DCS and other PCOM prioritized issues, and there is no engineering advisory structure chartered to consider, discuss, and evaluate new technological offerings. The current TAMU organization is fully capable of managing ongoing developments, and it is clear that responsibility for safety, system engineering, and compatibility of on-board and below-hull activity must remain with the Science Operator. However, we believe that changes are necessary to increase international participation and to seriously explore advanced technologies and alternate approaches to meeting science needs. While we do not expect that enhanced engineering activities will significantly influence JOIDES RESOLUTION drilling operations in the next year or two, they are very important to developing -- and gaining confidence in -- the stated objective of a broader suite of bottom penetration opportunities (shallow water, ice, deep drilling, fractured hard rock, etc.) during the first phase of the renewal period, and vital if the second phase (post-1998) is to include significantly enhanced drilling capabilities (whether or not on the current primary platform). As with Wireline Logging Operations, the Committee found advanced engineering, and exploration and management of new innovative third party developments, to be perhaps the weakest elements of the current program.

There was also much interest expressed in competing for computing and data management services. Further, changes in the shipboard computing and data management environment are required. First, as noted above, we have concluded that computer support for Wireline Logging needs to be integrated with the rest of the on-board suite, both for efficiency and to help with core-log integration. Second, there is a widely recognized need for improved ship-shore communications (TAMU intends to install an INTERNET connection aboard JOIDES RESOLUTION as of Leg 143). Third, we envision that with an improved data management capability it will be possible both to speed production of Volume A reports and to issue significant portions of them on CD ROM or other digital

format, eliminating much of the current analog material and reproduction/photographic effort.

Of most significance, however, is the need for a major overhaul of the shipboard computer system. While this Committee was conducting its review, the Data Handling Working Group met in Toronto on 5 and 6 March and recommended the development of a "new fully integrated ODP Data Handling System" (Appendix G). We quote from their introduction:

> "Changes are urgently required to the shipboard computer system on the JOIDES RESOLUTION. The changes are needed because the work of the ship-board scientist during legs is being seriously hampered by the difficulty of retrieving data relating to the current leg, and by a lack of sophisticated computing resources to manipulate that data. The integration of the increasing amount of logging results with core data is also essentially impossible within the confines of the present shipboard computing environment. Ship to shore data communications are poor, making 'real-time' shore-based interaction with ongoing drilling difficult. Changes are also needed to allow the storage and organization of the greatly increased amount of numerical data being generated on legs. The presently installed VMS-based S1032 database system is totally inadequate for this task and unless changes are made there is a grave danger of ODP being unable to rationally archive shipboard data for post-cruise and subsequent study. Current methods for disseminating ODP data to the wider shore-based community also need improvement."

Subsequently, PCOM considered the DHWG report during its April meeting in Corvallis, OR, and adopted the following motion:

> "PCOM endorses the DHWG recommendations as contained in their minutes of March 5-6, 1992, and requests of I. Gibson a list of possible candidates for a steering group that will continue to work with TAMU on this issue. TAMU and the steering committee should jointly prepare a report for PCOM outlining the likely costs and implementation schedule of the DHWG. This report should be presented at the August PCOM meeting. Motion: Lewis; Second: Kidd; Approved: 16-0-0-1."

Clearly then, changes to the onboard computing and data management system will occur; at issue are affordability and procedure. PCOM's action essentially recommends that TAMU implement the changes through subcontract, and that TAMU and the to-be-formed Data Handling Steering Group (DHSG) survey outside interest and investigate cost and schedule.

During our visit, TAMU repeatedly stressed to the Committee the vital importance of close communication among computing, data management, and publication functions. Indeed, to further improve this they plan to reorganize by putting "Data Bases" and "Computer Services" groups -- now reporting respectively to Science Operations and Science Service (see Appendix C) -- under a single manager (new position).

While we agree with TAMU (and PCOM) that the computing, data management, and publication functions are inextricably linked with each other, we did not see them as tightly tied to the remaining operational tasks; and given the significant international interest in participating in these aspects of the program, the Committee concludes that they can and should be offered for competition as a package. TAMU, obviously, should be encouraged to offer their own refined approaches in this process, and teaming should be encouraged. The ongoing work of TAMU and the DHSG as approved by PCOM should assist in defining the competitive package.

In summary, we conclude that TAMU should remain the Science Operator for the first phase of the renewal period, but that steps can and should be taken to expand international participation in curation, staffing, supplies and services, engineering, and data management, without excessively perturbing the current effective managerial structure.

RECOMMENDATIONS (1993-1998)

Based upon the above conclusions and findings, the Committee recommends the following nine actions.

a. Repositories: TAMU should retain responsibility for curation and repositories throughout the renewal period. TAMU should recommend to JOI the least-cost procedure (and associated policy) for expanding facilities adequately to curate and manage cores collected during the renewal period. TAMU's procedure in accomplishing this task should include solicitation of offerings from interested partners. TAMU's first priority should be to provide adequate facilities to curate cores from upcoming Atlantic legs.

Discussion: Existing repositories are well managed, and to maintain continuity and conformance to uniform standards TAMU should continue to have the responsibility for all ODP core curation. A new facility is needed to handle cores from upcoming legs. At issue is both cost, which must be minimized; and policy, i.e. striking a balance between broadened participation and centralized storage. TAMU has the necessary expertise to estimate the amount of core storage required, and since any new repository will be operated -- as are current ones -- under subcontract to TAMU (if our recommendation is accepted), they should have the responsibility for recommending alternatives. Reasonably quick action is necessary to ensure that new repository space is ready to accommodate upcoming Atlantic Ocean legs.

Since both policy and cost issues are involved, we concluded that TAMU should be free to conduct informal discussions and evaluations rather than simply mandating that they issue an RFP in accordance with their normal purchasing procedures. Some degree of haste is in order for upcoming Atlantic legs because of the lead time required to prepare new space. Expansion of facilities for Pacific and other cores is a matter of less urgency, but when it is required the cost/policy balance established by Atlantic expansion should be maintained.

b. Wireline Logging: JOI should immediately offer for international competition among ODP members the at-sea aspects of wire-line logging, to include operation of specified standard and special purpose research tools (an industrial suite, and the set of ODP-owned mature tools), and on-board data quality control and preliminary log analysis, to include assistance in core-log correlation (see ODP Policy Manual Sections 3.19 and 3.20).

Discussion: Since LDGO does not desire to continue providing this service beyond September 1993, a new performer must be found. Because several qualified members expressed specific interest, a competition is appropriate. Criteria for selection should include cost, demonstrated experience, and qualifications of key personnel. JOI should obtain assistance from DMP in evaluating responses.

Our recommendation deletes from the suggested competition the computer operations, shore analysis, and implicit responsibilities for tool development, which are present in the current LDGO subcontract. Each of these should be handled separately, as described below. While an alternative to our recommendation would be to include some or all of these elements of work in this offering, we believe that routine at-sea logging is a well-defined and separable task for which a new performer must be found, and that the other operations require a different approach.

As an alternative to a direct competition from JOI, the responsibility for Wireline Logging could be assigned to TAMU, and TAMU then be directed to run a competition through its normal purchasing procedures. This has the clear advantage of assigning overall responsibility for all below-hull operations to a single contractor, which could yield improved efficiency, safety, and control of the engineering and development environment. Despite these advantages, the Committee recommended retaining separate subcontracts from JOI because TAMU expressed interest in performing Wireline Logging themselves. Should this change and TAMU decide not to compete for logging and on-board log processing, we believe that the program would benefit from TAMU management of this shipboard service.

c. Log Analysis: PCOM should solicit suggestions and, with the assistance of the Downhole Measurement Panel, recommend the type, amount, and timeliness of analysis to be routinely performed. With IHP recommendations on data management procedures and

BCOM advice on the impact of anticipated costs, JOI can then determine whether to conduct a competition or extend the current contract with LDGO and have them arrange for partner participation.

Discussion: LDGO proposed a significant extension of logging and the establishment of an ODP Data Net prior to the January EXCOM, as part of their FY 93-96 Program Plan. Their composite response to the Committee's request included a slightly modified version of this plan. Other partners also were interested in performing analysis services, either for standard or expanded downhole measurements.

Clearly, in this case the science community must determine what services it needs and wants, and the program must balance such needs versus costs and alternatives. When significant changes are suggested, as in LDGO's proposed network, they must be processed through the science advisory committee structure (and evaluated for impact by BCOM) before they are brought to EXCOM. Since considerable work in defining the proposed expanded approach has already been accomplished, it should not be an extensively long or difficult task for PCOM to determine what extended services if any the science community needs. Once this has been accomplished and costs have been assessed, JOI can decide how to ensure broad participation in providing the desired product. The Committee simply believes that the science screening and cost/benefit analysis processes must occur before proceeding to competitive procurement. We also note that any proposed shoreside logging analysis network must merge with the overall shipboard computing and data management system discussed in recommendation d. below, provide access to analytical results to scientists in accordance with existing agreements, and prepare input to Volume A in formats recommended by IHP and as specified by the computing and data management network contractor (see d. below).

The Committee notes that at their April 1992 meeting, PCOM supported the concept of a data net "to improve real-time core-log integration and data reduction, interpretation, archiving and dissemination." What is needed now is to move beyond the concept to the establishment of a plan that is acceptable to the community and affordable. This will require, first, critical review and recommendations from DMP to establish community requirements for routine analysis and data management; and, second, interaction with IHP to ensure consistency of data management procedures throughout the program (see d. below). The Committee believes that it is timely to conduct these studies, but notes that this initiative must proceed in parallel with, or better integrated with, plans for modification of the on-board computation and data management network. We also strongly recommend that the routine logging and shoreside log analysis tasks be clearly separated from engineering, development, and extended downhole measurements.

One concern with this approach is the need for continuity in routine log analysis. If the recommended studies are completed expeditiously, it may be possible to compete shorebased log analysis simultaneously with on-board logging (item b.). If not, provision

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must be made for continuity of service, presumably via further extension of LDGO's contract.

d. Computing and Data Management Network: JOI should seek formal expressions of interest in providing and operating a basic ODP "Data Management System." This system should include an integrated shipboard computing environment servicing all science operations, on-board data analysis and data bases, and both on board and shorebased aspects of data correlation, archival, and publication. Based upon the responses, JOI can then determine if competition is appropriate and whether the contract for this major program component should be managed directly by JOI or by the Science Operator.

Discussion: Many international participants expressed interest in performing parts of this operation. In addition, as described above DHWG has recommended a significant change to the shipboard computer system, and wireline logging computers should be integrated with the rest of the on-board suite and operated by a single contractor. We therefore believe that significant changes to current practice are required and competition is warranted. We were concerned however that the continuity of data management from initial acquisition through publication of Volume A -- a factor that was stressed by TAMU -- not be disrupted. Such continuity will become even more important in the future as we move toward publication and distribution of larger portions of each leg's initial volume in digital format (the Committee recognizes that this is an assumption on its part, but notes that available technology could both reduce costs and provide much of Volume A data in a more usable format and recommends that IHP consider this suggestion). Consequently, we recommend that this entire aspect of ODP operations -- management of the data from acquisition through publication, then archiving -- should be managed through a single subcontract.

We suggest an interim phase prior to formal competition to allow for formation of joint ventures. No one partner or group of partners suggested operations in the manner which we propose, so that there is considerable opportunity for teaming. A second reason for an interim phase is to allow the science advisory structure and JOI time to extend the work of DHWG as necessary to match this recommendation (e.g., all on-board computers managed by a single operator vice separate wireline and science suites, and increased digitization of Volume A). Many of those who expressed interest (before the DHWG report) had other suggestions, including for example different hardware/software suites and wideband ship to shore data links, and these options should be considered during the process of developing the precise task package to be competed. As with the other offerings for services beyond what is currently performed, cost-benefit trades must be conducted and a competition should be for a set of basic tasks (with add-ons permitted if appropriate) rather than encouraging offers of a-priori unaffordable services.

The Committee notes that there are several alternatives to this recommendation. The simplest is

Alt. A: Leave science computer operations and data management as part of the TAMU Science Operator Contract, add responsibility for wireline logging computers and for upgrades as recommended by the Science Advisory Committees, and require TAMU to compete the upgrades or significant parts thereof.

This alternative meets our criterion of continuity and on-board systems integration. It provides for incremental growth and change through recommendations from the science advisory structure. It is compatible with the PCOM April decision re the DHWG report. It simply restricts the breadth of competition. (We assume that if our primary recommendation was accepted, TAMU would compete -- alone or as part of a joint venture -- to continue to perform these functions.)

Alt. B: Compete on-board computing (including wireline logging computers) and data management services only.

TAMU has recognized the need for single point supervision of these functions by its planned reorganization. Two partners (both U.S.) expressed interest in changing and managing the shipboard computing environment, and others were interested in portions of these operations. Under this alternative, responsibility for data management ashore and publications would rest with other contractors. The hand-off would occur either physically, or electronically once data reaches designated shore receiving stations (to then be distributed via an ODP data net, for example, if one was implemented). This alternative has the advantages of competition (and thus, ostensibly, improved services) but breaks the continuity of the data stream. This certainly is manageable but not, in our opinion, desirable. This alternative would benefit from the same science/budget review and system functional description as our principal recommendation, to preclude the strong possibility of unaffordable offerings. Another, simpler approach is to specify a fixed cost for the service, run a formal competition, and select the winner based on quality (a special committee or representatives from non-competing institutions would assist JOI in this task). This approach is feasible for this alternative since competition will likely be among single institutions vice teams.

Alt. C: Any of the above alternatives (principal or A or B), with the additional responsibility of developing a dedicated shore-based ODP Data Network to improve accessibility of all digital data and operational/analytical interaction among partners.

The concept of an ODP data network has been quite well received. While it was initially suggested in the context of logging analysis only, it should be equally applicable to other digitized ODP data, and speed the elimination of residual analog data bases. Indeed if any electronic network is to be implemented (to be recommended by PCOM as described above), whether or not a ship-to-shore wide band data link is included (our opinion is that this is too high cost to be justified by scientific gain), we strongly recommend it be done in this fashion.

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If this alternative is pursued, the logging analysis contractor(s) would then interact over the overall network that connected all partners, rather than establishing and operating their own among a much more constrained set of participants. Again, we stress that the two-phase approach to this issue not only allows but encourages partnering; and the more contractually "seamless" the overall ODP "data management system" is, the better it will functionally operate.

e. Extended Downhole Measurements: PCOM, with the assistance of the Downhole Measurement Panel, should determine which -- if any -- additional downhole measurements should be conducted as a routine ODP service (i.e. supported with comingled funds), and assess costs. If additional services are desired, BCOM should review the cost increases, evaluate potential offsets, and recommend programmatic changes to EXCOM. At this point, depending upon the nature of the experiments and which portion of routine operations (i.e., drillstring, wireline, or other below-hull) is involved, a procurement procedure (preferably a subcontract from the Science or Wireline Logging Operator) can be selected.

Discussion: Several ODP partners recommended that new or additional (mature or proven) downhole measurements be performed on a routine basis. Hydrogeology, VSP, and downhole tools for measurement ahead of the bit are examples. All of these are valuable measurements, but all are new services which will cost money and, in the absence of funding growth, displace some aspect of the ongoing program. Consequently these suggestions must pass through scientific and budget review before implementation. The Committee believes that in any instance where more than one participant is capable of performing a desired service (e.g. VSP), a competitive procurement process should be employed to select the vendor. This is at least as important for services as it is for supplies (see comments below, item h.), if international participation is to be encouraged.

f. Engineering and Development Environment: TEDCOM should be reconstituted and chartered, as a parallel to PCOM, to be responsible to EXCOM for (1) overall supervision of the development procedures for and suitability of new drilling and downhole instruments and techniques, (2) assessing the suitability of alternate platforms for use in the first renewal phase, and (3) assessing and recommending technologies for use in the post-98 time frame. The service panel structure should be modified, or expanded, and charged to meet specialty needs of the reconstituted TEDCOM.

Discussion: As noted above, there is a very significant contrast in the program between the broad and innovative approach to new scientific ideas, and the much more restricted approach to technology. Effectively, TEDCOM now acts as an advisory structure to TAMU's Development Engineering group and there is no formal structure for development of third-party tools. We reiterate our belief that the program suffers from these deficiencies and suggest that the appropriate first step in resolving them is to implement an advisory structure parallel to that in science. This group -- comprising

representatives of the partners with interest and expertise in engineering development, would have among its initial tasks the responsibility to review, and recommend changes to, the current development management structure. Of most immediate concern are the establishment of improved procedures for development and monitoring of third-party tools, and an assessment of progress with and alternatives to the DCS.

Quite obviously the drilling and logging capabilities of JOIDES RESOLUTION and any alternate platforms used by ODP are of fundamental importance to the program. While there is a prioritized list of technical drilling enhancements being adequately pursued under that current structure, we found -- as discussed above -- a quite narrow set of vendors, and of even more concern a lack of ability within the program to stimulate and evaluate ideas for new drilling and analytical techniques, and to ensure orderly pursuit of the range of technologies needed for improved access to the ocean floor. Compared to the science side of our house, the engineering side is haphazard and restricted.

Our recommendation was stimulated not only by our concern with the existing (rather, only partially existing) current development environment, but also by the breadth of ideas suggested in response to our request for expressions of interest. We were also impressed with the suite of techniques that have recently become accessible to ODP through the reentry of Russia. The program lacks the structure needed to elicit such ideas and alternative engineering approaches routinely and to evaluate them, let alone to ensure efficient development and integration of new tools. In sorting through a variety of approaches, we concluded that resolution of these deficiencies should start with the establishment of a competent and representative advisory structure that parallels -- and calls upon for assistance -- the science structure. DMP, for example, could not only advise PCOM upon which measurements were needed for selected legs, but advise a reconstituted TEDCOM on requirements for advanced downhole sampling techniques.

The Committee does note that the Science Operator must retain system engineering responsibility for all on-board equipment, and in particular for all below-hull operations. TAMU currently fulfills this responsibility for everything except tools attached to the logging wire, which are the responsibility of LDGO and which -- at sea -- fall under the aegis of the Operations Superintendent. Under our proposed contracting scheme the new Logging Contractor will retain LDGO's responsibility for standard and specified mature downhole tools. We stress the absence of a rigorous borehole measurement development group from our current (and proposed) contractual structure, and would urge that the reconstituted TEDCOM consider on a priority basis the means by which one should be established. We note that this will be a cost item, but one that must be borne for both safety and improved operations.

The Committee believes that the recommended rechartering of TEDCOM is a matter of first-order importance to the overall program. We note that since TEDCOM would have to meet more frequently then at present, a significantly enhanced range of

technical skills and responsibilities is required, and TEDCOM would report to EXCOM, some added costs are involved and the partners may wish to reevaluate the nature of their representation on the Committee.

g. TAMU Staffing: ODP Council should discuss procedures for enhancing international employment opportunities at TAMU, particularly for Staff Scientists and Marine Technicians.

Discussion: It would be desirable routinely to have as much international participation on the Science Operator's staff as possible. TAMU recently modified its regulations so that seagoing staff on A/B rotation can, after an initial training period, live wherever they desire. This change should increase the appeal of marine technician jobs to non-U.S. personnel.

On the other hand, TAMU staff jobs are offered as permanent employment and U.S. immigration laws require issue of a labor condition attestation and application for a temporary, non-immigrant H-1 visa (implying non-permanence) before an overseas hire is permitted. This process often is complicated. Further, while "permanent" TAMU employment may be attractive to some international participants, it perhaps discourages others who would see a temporary opportunity to work at sea with ODP -- with an assured or at least assisted ability to return to their home institutions -- as more conducive to their career plans.

Since some potential changes may require waivers to, or at least a detailed knowledge of regulations, this is an appropriate topic for the Council to consider. The Committee does urge EXCOM to support a target of 3 (of 7) Staff Scientists and 10 (of 25) Marine Technicians (for a minimum 3 to 4 year terms) as an appropriate and reasonable minimum for international staffing, and to suggest to the Council that a variety of opportunities for employment be made available to encourage international participation. We further recommend that JOI, Inc. investigate the options for exceptions to current U.S. employment restrictions for ODP.

h. Supplies and Services: JOI and TAMU should modify the current requirement for international tender to encourage more international sourcing.

Discussion: Currently, TAMU offers only procurements for items in excess of $25K apiece to international competition. We believe that this limit is too high, and that a much greater diversity and number of requests for supplies and services of all types could be opened up. The expressions of interest included items as diverse as hardware and software for core-log data integration, shallow water drilling platforms, and printing, which could be competed within the existing structure. It might, for example, be possible to meet some of the recommended staffing changes by offering procurement requests for Marine Technician services.

This is an action that in our opinion can, and should, be accommodated with no change in structure or increase in staffing. The key is to adopt an innovative and proactive stance in expanding the concept and operation of an international ODP vendor community. International sourcing should be the routine practice, not the exception.

We note that commensurate with JOI and TAMU actions to increase international offerings, it will be increasingly important for partner representatives to ensure that providers of supplies and services in their countries are aware of the opportunities and encouraged to participate.

i. Alternate Platforms: Requirements and opportunities for use of drilling platforms other than JOIDES RESOLUTION, and for support platforms as may be required (e.g., ice guard) for the 1993-1998 period, should be established by PCOM. TEDCOM should assess the technical and engineering suitability of available platforms to meet scientific objectives. Services of such alternate platforms should be contracted for (on a competitive or sole source basis as appropriate) by TAMU.

Discussion: The program is fully capable of using alternate platforms during the 1993-1998 period. We merely suggest a separation of science (requirements) and engineering functions between PCOM and the (recommended) reconstituted TEDCOM, and use of the available contractual process at TAMU for procurement.

The Committee notes that there are many platforms available worldwide which are equally or more suitable (or less costly) than JOIDES RESOLUTION for some scientific drilling tasks. Shallow water, atoll, and Arctic drilling are examples. Some were mentioned in the expressions of interest, and we encountered others during our visits. Given available funding, use of such platforms would help meet the objective of enhanced international participation with continued excellence and cost effectiveness during the 1993-1998 period.

To assist in defining alternate platform use, we recommend that PCOM prepare (and periodically update) a prioritized list of opportunities (scientific objectives, locations, tasks). ODP partners could then identify specific platforms which could be reviewed by TEDCOM so that a vendor list could be prepared and provided to the Science Operator. While this step is not essential, we believe it would help identify opportunities and assist BCOM and JOIDES in planning a rational and cost effective program.

FINDINGS AND CONCLUSIONS (POST-1998)

Although there was some general interest in competing for the Science Operator Subcontract in the post-1998 time frame, only TAMU -- which as noted above has obtained an extension of day rates with SEDCO-FOREX -- offered a specific proposition, namely to continue with JOIDES RESOLUTION as the primary ODP platform. TAMU did remind

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the Committee that the ship will need a few-months yard period and several million dollars of refit work upon conclusion of the first renewal phase. Knowledge that the ship will continue to be available, at projectable costs, provides the program a sound basis for consideration of alternatives.

Two other elements of the responses provided stimulation for consideration of post-98 operations. The first is the potential availability of platforms which can extend or expand operations on a routine but part-time basis. The NEREIS proposal and KNORR are two examples. There also is the opportunity suggested by the Nansen Arctic Drilling Group for merger of interest and activities if, and when, NAD programs evolve. Further, it is probable that both the Russian and Japanese scientific drillships will be in operation (and potentially available for some ODP work) within the 1998-2003 period. These possibilities, plus extension of the alternate platform concept which we recommend be aggressively pursued in 1993-1998, offer the possibility that ODP could define a program in which there was no one dedicated ODP drillship, but rather that a variety of services and platforms, each tailored to particular scientific objectives, would be used.

The second element, if our recommendation f. above is adopted, is the pursuit of a much more active technological development program during the 1993-1998 time period. Either through evaluation of commercial activities or through ODP support of specific developments as recommended by a reconstituted TEDCOM, the program itself may well define new capabilities that could be implemented after 1998. Again, depending on the technologies involved, these could either be on board a dedicated ship like JOIDES RESOLUTION or obtained from other providers.

Essentially, the Committee notes that the possibility of maintaining JOIDES RESOLUTION through 2003 provides a sound basis for planning and evaluating alternatives, and urges the establishment of the recharted TEDCOM as described above as the best immediate action for setting out and defining such alternatives. We also believe that the key to a coherent international drilling effort is unity and continuity of the planning process and advisory structure. We recognize that there will be other national and perhaps international groups that will determine the primary activities of vessels such as the NEREIS proposal (EC) or KNORR (UNOLS); but to the degree that they participate in ODP, their activities should be directed to meet COSOD objectives as planned and controlled by the ODP advisory and management structure. It is entirely possible to have a coherent program that routinely uses multiple platforms and techniques; the Committee believes that this is desirable, even necessary, to meet scientific objectives. On the contrary, it is not possible to maintain such a coherent effort if the unity of the planning and program management process is disassembled.

Respectfully Submitted

C. Dorman H. Durbaum D. Falvey

October 1991

EVALUATION OF THE FRENCH PARTICIPATION IN THE OCEAN DRILLING PROGRAM

Principal Conclusions and Recommendations

Planned to last ten years, the Ocean Drilling Program (ODP) will end in 1993.

Before taking a decision on possible french participation in a follow up programme it was decided to carry out an *audit*. This concentrated on *the quality of the scientific programme and its desired evolution, the fall out from the technological programme and its capacity to attain new objectives, as well as the organization of the management of the programme.* The principal objectives of ODP are orientated around the following themes of research :

- *the structure and composition of the oceanic crust ;*
- *the history and physico-chemical evolution of the oceans ;*
- *the structural evolution of the junction continent-ocean (continental active and passive margins) ;*
- *the origin and evolution of marine sedimentary sequences ;*
- *the paleoevolution and evolution of the climate, of the atmosphere, of the waters of the oceans and of living things.*

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The Evaluation Committee took into account the following :

- the significance of oceanic drilling in the study of the above subjects ;
- the quality of the scientific results that have been acquired *(notably those concerning hydrothermalism, the circulation of fluids in the lithosphere and the heterogeneous nature of the creation of the oceanic crust at the level of the slow ridges)* and the potential for future results *(notably in the study of the lower crust, and of paleoevolutions as well as the possibilities offered by logging, in the quest for information on sedimentary layers or for the installation of seismographs in wells)* ;
- the size of the national community engaged in the programme (probably the second largest in ODP) ;
- the generally positive impression given by the level of the French scientific contribution to ODP ;
- the large consensus obtained on the necessity of continuing ocean drilling within an international framework.

The **Evaluation Committee recommended prolonging participation in ODP for another 3 or 4 years, but also recommended that it should be recentered on a small number of high priority themes.** The following themes can be specifically cited : the study

of problems related to paleoclimates, *an objective considered to be easily reachable, important, and urgent ;* the study of the deep structure of the oceanic crust, *a difficult but exciting objective* ; and integrated studies leading to a model of the evolution of sedimentary basins.

As a result, the program should :

- encourage on the *national level* a reconversion of more geochemists and reinforce the participation of geophysicists and specialists of rock mechanics ;
- on a long term basis, obtain very deep holes with reliable core orientation (in order to deduce tectonic rotations). It must be underlined that for the future the interest in the "crust" program depends heavily on this capability and on the 3D aspects of crustal studies ;
- in general, consider scientific targets more ambitious than before, probably implying several months of drilling at a single site.

This also implies, *on the international level,* an evolution of the science advisory structure in order to guarantee that major high visibility scientific objectives are duly considered and that long term multi–objectives and multi–leg projects can be realized. As a consequence the **present organization of ODP** should be modified, with the addition of a **Permanent Scientific Council,** of which the present Planning Committee would become a **sub–committee.** This Council would be responsible for deciding the scientific objectives and fixing the main priorities of the cruises. *The setting up such a structure should satisfy those who have criticised the capacity of the present structure of ODP to make and impose the best strategic choices.*

Furthermore, since the publication of **cruise results** in the *"Proceedings of the Ocean Drilling Program"* is insufficient to inform the whole of the scientific community, the Evaluation Committee recommends that the most important results be published in **specialised international journals.** Likewise the publication of **review papers,** presenting the results obtained at different sites on comparable phenomena, should be strongly encouraged.

Technological developments are required to enable these objectives to be pursued, which implies that an increased effort must be made in this field, possibly at the expense of scientific cruises. This effort should be closely coordinated with industry. In this perspective a more balanced participation of national companies in technological developments must be obtained, with a fair return of knowledge and experience gained and of industrial ownership. IFREMER should further develop its role as a rapid transmitter of *"calls for bids"* to french industry. The **participation of french engineers** in the programme *either through secondments to the american technical teams responsible for the developments, or by embarking them on the drillship* is highly recommended.

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Finally, the progressive divergence of parallel programs, requiring different approaches and different platforms, can be anticipated, given the present scientific preoccupations, all of which fit in the perspective of a *global observation of the planet.* There are several such programmes planned including : a european ship dedicated to shallow drillings but of very high definition to study the *paleoclimat*, of a soviet ship for *general and polar* use, of a japanese drillship for great depth to study *the lower crust* and of a "north american" platform for *polar drilling*. The Evaluation Committee views these projects very favourably, and hopes that they will be realized in **a well coordonated international framework.**

Preparation by French Institutions (MCS (Multichannel seismic reflection regional studies and Site surveys) of next planed or proposed ODP Legs

CRUISE	YEAR	LEG or PROPOSAL	OBJECTIVE
LUSIGAL	1990	Leg 149 NARM-DPG	Non volcanic conjugate passive margins. Iberian abyssal plain and Galicia margin.
EQUASIS	1990	346	Eastern Equatorial Atlantic transform margin.
ERABLE	1992	NARM-DPG	Non volcanic conjugate passive margin. Newfoundland Basin.
CASSIS	1992	333, 343, 384	Carribean Zone
PRISMED	1992	379	Mediterranean ridge

Several other cruises are also achieved or planed with multibeam or diving surveys.

JOI/USSAC Report to EXCOM
June 1992

I. Workshops and Results Symposia

Note: JOI/USSAC Workshops and Results Symposia are open to all who are interested. Contact convenors if you would like to attend.

A. Cretaceous Greenhouse Coring Project
October 4-9, 1992, Perugia, Italy
Convenors: E. Erba (Italy), R. Larson (USA), W. Sliter (USA), A. Fisher (USA), D. Bottjer (USA), G. Napoleone (Italy), I. Premoli-Silva (Italy). R. Larson wrote the USSAC proposal for the U.S. part of this effort.

B. Results of Drilling in Western Pacific Active Margins and Marginal Basins
January 18-21, 1993, Monterey, CA.
Convenor: Brian Taylor

C. Support for four U.S. scientists to give ODP-related talks at the **International Geologic Congress** in Kyoto in August 1992. Jamie Austin is coordinating the U.S. effort.

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II. Site Survey Augmentation

Funded

A. Jack Casey (U. Houston): **FARANAUT Simrad Survey and Nautile Submersible Diving in the 15°20' Transform and Adjacent Ridge Segments.** USSAC is providing Dr. Casey with some support to participate in a French cruise where he can contribute his expertise to the survey and post-cruise analysis of basalts and structural data.

B. Steve Holbrook and Mike Purdy (WHOI): **Shear Wave Velocity Characterization of a Gas Hydrate Deposit at a Potential Drill Site on the Blake Outer Ridge.** USSAC is providing some support to augment an NSF/MGG-funded cruise to enable scientists to put out a horizontal-component OBS for recording shear wave data and post-cruise processing of the data for additional seismic characterization of gas hydrates.

C. James Austin (UTIG): **Site-Specific Surveying in the Northern Newfoundland Basin, Offshore Eastern Canada: A Joint U.S./Canadian/French Effort to Understand North Atlantic Non-Volcanic Conjugate Passive Continental Margins.** USSAC is providing support for post-cruise processing of MCS data at UTIG. The data will be collected on the Canadian ship *Hudson* this summer.

D. James Kennett (UCSB): **Survey of Santa Barbara Basin, California for APC Coring During ODP Leg 146.** Funds were provided for one day of survey time on the *R/V Farnella* to collect the necessary high-resolution seismic data to satisfy PPSP review to drill (APC) a 200 m site in the Santa Barbara Basin. PCOM put this site on the drilling schedule at their April 1992 meeting.

In Review

E. Kathleen Crane (LDGO): **Upgrading the Site Survey Data for Leg 151 "The Atlantic Gateways" by the Production of a Norwegian-Greenland Sea Atlas.** Funds are requested to contribute support to the Norwegian Polar Research Institute for production of the atlas ($10,000), plus salary support for Crane and a draftsperson to compile the data.

F. Roger Flood (SUNY Stony Brook): **Site Survey Augmentation for ODP Drilling on Amazon Fan.** Funds are requested to add two days of ship time to Curray and Mountain's Ceara Rise cruise on the *R/V Ewing* (Aug/Sept 1992) plus post-cruise processing. High-resolution seismic data would be collected as required by the JOIDES SSP.

III. Distinguished Lecturer Series

JOI/USSAC is providing travel support for six distinguished scientists to give lectures on ODP-related topics at 23 colleges and universities which have had little or no involvement in ODP. This is the second year of this program. Speakers and topics for the 1992-1993 academic year are:

Janet Haggerty, University of Tulsa: The Late Cretaceous Through Cenozoic History of the Atolls and Guyots of the West Central Pacific.

J. Casey Moore, University of California, Santa Cruz: Investigating the Plumbing of Accretionary Prisms with the *JOIDES Resolution, Alvin*, and a Rock Hammer.

Warren Prell, Brown University: Evolution of the Indian Ocean Monsoon: Results from ODP Drilling and Climate Modeling.

Robert Zierenberg, U.S. Geological Survey: Seafloor Hydrothermal Systems on the Gorda and Juan de Fuca Ridges: Implications for the Formation of Massive Sulfide Deposits.

James Kennett, University of California, Santa Barbara: Cenozoic Climate Change: Paleoceanography and Event Stratigraphy.

Susan Humphris, Woods Hole Oceanographic Institution: Hydrothermal Systems of the Mid-Atlantic Ridge.

IV. Summer Research Program for Undergraduates

During the summer of 1992, JOI/USSAC is supporting two Summer Research Programs for Undergraduates: University of Hawaii and Lamont-Doherty Geological Observatory.

- Each program will support eight students to work with senior scientists on ODP-related research.
- Nearly half of the participating students will be from underrepresented groups.
- Nearly 300 students applied to participate in the two programs.

V. JOI/USSAC Ocean Drilling Graduate Fellowships

Eve Arnold (University of Rhode Island), Leg 145, Variation of Eolian Source Areas and Atmospheric Transport Pathways Recorded in North Pacific Sediments;

Dorothy Pak (LDGO), Leg 145, Late Paleocene to Middle Eocene Stable Isotope and Faunal Change: Implications for Deep-Water Circulation;

Harold Tobin (UC, Santa Cruz), Leg 146, Measurement of Velocity vs. Effective Stress in Scaly Fabrics from Leg 146: The Effect of High Fluid Pressures and Implications for Fault Hydrogeology;

Elizabeth Screaton (Lehigh University), Leg 146, Investigation of Fluid Sources and Movement at the Cascadia Margin;

Daniel Schrag (UC, Berkeley), Shorebased, Diagenesis of the Oxygen Isotopic Record in Marine Carbonates: Implications for Cretaceous and Early Tertiary Climates.

VI. Wireline Reentry

During early October 1992, the *R/V Moana Wave* is scheduled to carry out the first test logging operation in the OSN-1 hole off Hawaii using the Scripps wireline reentry system.

JOIDES Office
The University of Texas at Austin
Institute for Geophysics
8701 Mopac Boulevard
Austin, Texas 78759-8345

Tel: (512) 471-0471 or 471-6156
Fax: (512) 471-0999
Telemail: JOIDES.UTIG
Telex: 7408994 JOID UC
Email: joides@utig.ig.utexas.edu

APPENDIX 5

June 5, 1992

MEMORANDUM

TO: Brian T. R. Lewis

FROM: A. Maxwell, Chairman EXCOM *AM*

SUBJECT: PCOM comments on Briden report

Thank you for the comments concerning the Briden report. These will be presented to the EXCOM for discussion at its meeting in Washington DC in June. I appreciate PCOM's concern over this important report.

I would like to ensure PCOM is clear about certain aspects of the report and some of the subsequent actions. First, the Briden Committee was set up purposefully as a one person committee. This was done in order to have a single individual identify some problems that were facing EXCOM in connection with renewal of ODP. By so doing, nothing that was to come before EXCOM would be in concrete. In essence, it would only be the ideas of one member, which EXCOM could debate and approve each on its own merit. While Briden's initial concerns primarily involved multiple platforms, it was obvious to him, and EXCOM, that the future health of the program as an international endeavor required looking into other aspects as well. Briden did a superlative job in focussing the issues in his report.

Second, the Briden report was first discussed at the EXCOM meeting in Bonn in January. The general ideas of the report were approved by EXCOM with the reservation that many items required additional consideration before final action could be taken. At that time, some of the more easily resolved items were approved, others were referred to appropriate groups to study before further action was to be taken. In particular, a subcommittee consisting of Drs. Craig Dorman, Hans Dürbaum, and Dave Falvey was established to consider a number of items having to do with subcontracting and the incorporation of multiple ships into the program. NSF specifically requested actions on these items prior to the Joint ODP Council/JOIDES EXCOM meeting that is to be held on June 16. At the Bonn EXCOM meeting, a plan of action for the Dorman

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committee was approved that allowed for a fast-track approach to have the results by June. The Dorman committee has completed its work and its report will be discussed at a special meeting of the EXCOM just prior to the joint meeting with the ODP Council.

It is somewhat unfortunate that because of poor communications on my part, as well as Australia's, that all of the above information was not made available to Canada. Because of this, some of the Dorman committee's requests have been misinterpreted by some international partners. I regret this oversight, but it should not be blown out of proportion.

Lastly, I wish to emphasize, the Briden study and the subsequent Dorman study were fully sanctioned by the entire EXCOM and were undertaken in response to an urgent need to develop information requested by some member countries and NSF prior to agreeing to renewal of the long-term ODP contract. The reports of these studies, along with the PEC III report, all of which have some recommendations in common, have been or will be made available in their entireties to PCOM. Further, you will find that the Briden and Dorman committees along with EXCOM consider that PCOM and the other JOIDES advisory bodies should be involved in all appropriate decisions. EXCOM has involved PCOM in the past, and will continue in the future to keep it fully informed on all appropriate matters.

I hope these comments will allay some of the concerns expressed in your memo of May 21, 1992.

cc: EXCOM
PCOM
NSF
JOIDES Office
JOI,Inc.