

**MEETING OF THE JOIDES EXECUTIVE COMMITTEE
14 - 15 January, 1992
Bonn, Germany**

DRAFT MINUTES

Executive Committee (EXCOM)

- N. Bogdanov - Institute of Lithosphere, Moscow (Russia)
- G. Boillot - Université Pierre et Marie Curie, Paris (France)
- J. Briden - Natural Environment Research Council (United Kingdom)
- C. Dorman - Woods Hole Oceanographic Institution
- 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 - University of Hawaii, School of Ocean and Earth Science and Technology
- K. Kobayashi - Ocean Research Institute, University of Tokyo (Japan)
- L. Kulm (for D. Caldwell) - Oregon State University, College of Oceanography
- M. Leinen - University of Rhode Island, Graduate School of Oceanography
- A. Maxwell (Chairperson) - University of Texas at Austin, Institute for Geophysics
- W. Merrell - Texas A&M University, College of Geosciences
- 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)

Liaisons

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

Guests and Observers

- J. Baldauf - Science Operator (ODP-TAMU)
- H. Beiersdorf - Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)
- E. Cailliau - Institut Français de Recherche pour l'Exploitation de la Mer
- J. Erzinger - Institut für Geowissenschaften und Lithosphären-Forschung (Germany)
- M. Fratta - European Science Foundation (Consortium for Ocean Drilling)
- K.G. Jacobs - Bundesministerium für Forschung und Technologie
- J. Karte - Deutsche Forschungsgemeinschaft (Germany)
- L. Kay - Natural Environment Research Council (United Kingdom)
- G. Kullenberg - Intergovernmental Oceanographic Commission (UNESCO)
- D. Maronde - Deutsche Forschungsgemeinschaft (Germany)
- J. Maxwell - University of Texas at Austin, Department of Geological Sciences
- Y. Miki - Science and Technology Agency (Japan)
- C. Schneider - Deutsche Forschungsgemeinschaft (Germany)
- S. Takagawa - Japan Marine Science and Technology Center (JAMSTEC)

JOIDES Office (University of Texas at Austin, Institute for Geophysics)

P. Blum - Executive Assistant and non-US Liaison
C. Fulthorpe - Science Coordinator

SELECTED ACRONYMS AND ABBREVIATIONS

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

JOIDES Committees and Panels:

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

DPGs and WGs:

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)

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)

JOIDES EXCOM
Tuesday, 14 January, 1992

519. Initial Business

INTRODUCTION AND OPENING REMARKS

The meeting was brought to order at 9:00 AM by Maxwell, who introduced C. Schneider (DFG). Schneider welcomed attendees on behalf of DFG. He noted that EXCOM was meeting in a University of Bonn facility, adding that it was fitting that the meeting should take place in an academic institution with a strong earth sciences program. This was the first time during the 1990's that EXCOM had met in Bonn and Schneider hoped that it would not be the last. He wished EXCOM every success. Maxwell thanked Schneider for hosting the meeting and introduced Maronde. Maronde explained meeting logistics and arrangements for a dinner that evening and an excursion to Cologne the following day.

Introductions around the table followed. Maxwell noted that EXCOM's agenda was full. He outlined the meeting structure: the first day would cover post-1993 and renewal issues, while issues of the recent past, present, and near-term future would be addressed on the second day.

Maxwell stated that Anderson's proposed plan for future Wireline Logging operations represented long-range thinking of the type needed. However, it would not be discussed by EXCOM or BCOM, but would be referred back to PCOM for normal review procedures (e.g., review by IHP, DMP). Maxwell felt that by the time such reviews were complete, EXCOM would have considered procedures for subcontract renewal. EXCOM needed to decide on such procedures soon, since renewal was approaching, together with the issue of additional platforms.

APPROVAL OF MINUTES OF PREVIOUS MEETING

There were no further corrections to the revised draft minutes.

EXCOM Motion

EXCOM approves the minutes of the 9-11 July, 1991, meeting of ODP Council and EXCOM at La Jolla, California.

Motion Dürbaum, second Boillot

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

ADOPTION OF AGENDA

There were no modifications to the agenda, which was adopted by acclamation.

520. Ocean Drilling Program, Post-1993

NSF OVERVIEW AND PERSPECTIVE

Heinrichs reported that, fundamentally, nothing had changed since the last EXCOM meeting in July, 1991. The same tenets were being followed: the LRP was regarded as providing the scientific direction for renewal; NSF was looking for a 10-year extension in principle as the next increment for ODP; *JOIDES Resolution* was considered by NSF the primary platform for the first 5-year period, with a possibility for change in 1998; a review of facilities and options

for the second 5 years would be conducted during 1994-1996; JOIDES would remain the primary planning organization of ODP.

Heinrichs went on to note some practical problems. Partners were in different stages of their renewal discussions: three countries had completed their reviews and four, including the US, were in various stages; the position of Russia was uncertain. At least one international partner had suggested that the commitment to *JOIDES Resolution* be <5 years.

A draft MOU had been circulated since the July, 1991, EXCOM meeting for ODPC comments. One suggestion had been to change wording, which originally stated that JOIDES should provide advice and comments on the program plan, to state that JOIDES should approve the program plan. NSF had no objection to such a change. Suggestions had also been received concerning shipboard participation (numbers and timing). Heinrichs stated that shipboard representation would be at a level consistent with each partner's financial contribution to ODP; this must be correctly articulated in the MOUs. Another MOU matter, which was less an EXCOM issue, was that of intellectual property rights (IPR) raised by Germany. No satisfactory answer had been received from the US State Department; NSF needed to be informed by the State Department on what to include in the MOUs as a negotiating point. An additional MOU issue was restructuring how ODPC did business, but that should not affect EXCOM. Heinrichs felt that discussion of the basic content of the MOUs had been well received. New MOUs would look similar to existing MOUs.

An EXCOM subcommittee would report on future organization and management of ODP later in this meeting. NSF planned to continue with JOI, Inc. as prime contractor. EXCOM might need to discuss how JOI, Inc. was organized. Heinrichs stated that JOI, Inc. made strong management sense and would be difficult to change. Discussion of competition for subcontracts was also required.

NSF was using budget estimates in the LRP for planning purposes. NSF's model for future budget levels included 7 international partners and a 7% increase in dues in 1994. Resource allocation would have to be considered by JOIDES if there were only 5 or 6 international partners.

ODP ADVISORY STRUCTURE REPORT ON SCIENCE AND TECHNOLOGY NEEDS

Austin noted that his report was outlined in the Agenda Book (yellow pages 7-9). The report was based on the assumption that renewal would occur and that *JOIDES Resolution* would remain the primary drilling platform until 1998.

Austin began with a review of deep drilling developments. He pointed out that there were various definitions of deep drilling. ODP-TAMU considered deep drilling to include any hole that required ≥ 1 leg of drilling, while PCOM viewed deep drilling in terms of maximizing the capabilities of *JOIDES Resolution*, implying a 2.5 km hole in 4.5 km water depth (approaching the dynamic string limit). Parts of the scientific community wanted 4-6 km holes in 2-5 km water depth. At its August, 1991, meeting, PCOM modified OPCOM's recommendations to include a feasibility study of deep drilling (Agenda Book, yellow page 7). The issue was considered further at the December, 1991, PCOM meeting, at which PCOM asked ODP-TAMU to draft a RFP for the hiring of one or more consultants to carry out a deep-drilling feasibility study. The RFP would be reviewed by TEDCOM (Agenda Book, yellow page 8). Consultants would be paid from OPCOM funds if these became available. Dürbaum asked whether the studies would include DCS. Austin replied that the depth limitation of DCS had yet to be determined. DCS II was presently a 4.5 km system, but might ultimately be a 7 km system.

Moving on to DCS, Austin recalled that OPCOM had highlighted DCS as the most important ODP technological development; PCOM had reaffirmed this. Leg 142 would be an engineering test of DCS IIB. Leg 148 would be an engineering leg, also likely to be a test of DCS IIB. If Leg 142 was a scientific success, definitions might be changed to make DCS IIB operational technology, so that Leg 148 would no longer be a test of engineering development. There were some safety concerns about DCS IIB, because of the need for putting drilling personnel on a moving platform above the rig floor, but it had been judged safe in the event of catastrophic failure. DCS III would have all personnel on the rig floor and would also be more efficient than DCS IIB. A decision on DCS III options would be made in mid-late 1993; fabrication might cost ~\$2M.

Concerning downhole fluid sampling, Austin said that ODP had made a number of attempts. At its August, 1991, meeting, PCOM had reaffirmed the critical importance of GEOPROPS, whose development had been frustratingly slow. It was hoped that GEOPROPS would be tested on Leg 146 (CA). MDCB, which was necessary for use with GEOPROPS, was tested successfully on Leg 141 (CTJ). B. Carson (Lehigh Univ.), Leg 146 co-chief, had taken over development of GEOPROPS. Recommendations of a specialist downhole fluid sampling meeting, chaired by P. Worthington and held in August, 1991, were presented to PCOM in December, 1991. PCOM authorized formation of a steering group for *in-situ* fluid sampling, to meet preferably in conjunction with DMP meetings. The steering group would generate a RFP and it was hoped that OPCOM funds would be available for development of the resulting tool design.

IHP had recommended to PCOM that ODP's data handling systems be improved. At its December, 1991, meeting, PCOM authorized formation of a Data-Handling Working Group (DH-WG), which will meet in March, 1992. DH-WG's mandate is given in the Agenda Book (yellow page 8). An ODP-TAMU meeting on computer requirements was scheduled for January, 1992. Austin hoped that DH-WG would work in conjunction with ODP-TAMU. He added that DH-WG's recommendations would have budgetary implications.

PCOM introduced a statute of limitations on ODP proposals at its August, 1991, meeting. ODP proposals that have not been updated for 3 years would be declared inactive. Proponents would be informed and urged to update their proposals. This move was necessary to limit the proposal review burden on thematic panels.

DISCUSSION OF ISSUES RELATED TO SUBCONTRACT RENEWALS

Baker explained that he would discuss management and contractual aspects and leave policy to the report of the EXCOM subcommittee on future organization and management (Briden). He would present a combination of the JOI, Inc. viewpoint and what had been learned during the course of ODP.

JOI, Inc. felt that the overall management structure (comprising a prime contractor and subcontractors) was effective and should be continued. It differed from the DSDP structure, which involved more than 1 major contract. Short-term contracts, as used at the end of DSDP, should be avoided; these were very disruptive. Furthermore, if additional tasks are proposed, new funding sources must be identified.

Current prime and subcontracts were in place until 1993. Decisions must be made now about whether to modify the structure. Any modifications should be convincing improvements. JOI, Inc. looked to EXCOM for guidance on this matter.

Science operations and full-time ship operations were currently at one institution, wireline services at another. For the period after 1993, consideration could be given to whether some of

these functions should be continued at existing subcontractors or moved to new subcontractors. Baker noted that it was unlikely that any institution would wish to provide only service functions without science.

Unless major changes were proposed, ODP needed at least 1 full-time drillship. *JOIDES Resolution* was the ship of choice for the period 1993-1998 because of its capabilities and availability. The current ship contract had favorable terms through 1998. After 1998, the ship contract was at the discretion of both TAMRF and UDI. If the *JOIDES Resolution* was desired after 1998, contract negotiations should begin soon, the earlier the better.

In response to a question from Dorman, Rabinowitz explained that SEDCO would not want the same terms after 1998 as were presently in effect, because a big investment would be required to modify *JOIDES Resolution* at that time. Negotiations would be required. The present day rate was very favorable (< inflation). Merrell added that talks with SEDCO had so far been informal. Baker noted that the evidence suggested that the more negotiation was delayed, the less favorable terms would be after 1998.

Baker continued his report, pointing out that provision could be made for addition of part-time drilling vessels during the first 5-year period post-1993, and for either continuation of *JOIDES Resolution* or a different vessel in the second 5-year period. He showed an example of how this might be done (Appendix 1). From the management point of view, it was completely feasible to add additional vessels operated by institutions other than the prime ship contractor; there could also be additional wireline operators. These additional operators would report directly to JOI, Inc. or to prime operators. In response to a question from Helsley, Baker said that the view of JOI, Inc. was that funds should come through the prime contractor. Pyle added that some operators might offer their drillships free of charge, so that no new funds would be needed.

Baker explained that the Schlumberger wireline services contract was negotiated year-by-year. From the management point of view, it was completely feasible to add additional wireline services operators. These would report either to JOI, Inc. or to the prime wireline services operator. It was also feasible to add additional operations or engineering to ODP (e.g., downhole experiment coordination, Appendix 1).

Baker repeated that to maintain the integrity of a program with many facilities, centralized operation with a prime contractor and single science advisory structure should not be changed.

It would be feasible to have the *JOIDES* Office at a non-US institution, though the possibility of increased costs as a result would have to be considered. In addition, international affiliates could be added to JOI, Inc. JOI, Inc. had not yet, however, explored making itself an international corporation.

REPORT OF SUBCOMMITTEE ON FUTURE ORGANIZATION AND MANAGEMENT OF ODP

Maxwell recalled that, at its meeting in July, 1991, EXCOM had set up a subcommittee on future organization and management of ODP, comprising Briden.

Briden explained that his report (Agenda Book, white pages 189-204) addressed where ODP was at present, where it wanted to go, and how to get there. He had tried to build on debate at the July, 1991, EXCOM meeting. He had included some introductory material because he felt that he was writing not just for EXCOM, but also for a wider audience which might be less familiar with ODP.

There were many forces for change. Briden quoted the draft PEC III report (Agenda Book, white pages 205-258): "ODP should operate as a science management structure entrusted with accomplishing certain scientific goals which go beyond the capabilities of individual P.I.'s or even nations." Briden concurred; he felt that ODP must be truly international and open.

Briden briefly outlined his report. The basic lesson of the "Financial Constraints" section was "be realistic". From the section "Principles of Organization", the lessons were: unified planning, devolved operations, and even-handedness. Regarding "Subscription Structure", Briden noted that present subscriptions gave international partners two shipboard scientists/leg; the US paid more. Briden proposed a funding structure for new vessels under which a host member must: 1) equip a ship for ODP at no cost to ODP; 2) reach contractual agreement with JOI/JOIDES for any shorebased operator contracts that it would host; 3) pay a standard subscription for the number of units of shipboard participation it proposed to buy; 4) negotiate whether it should also pay a "leadership" premium. Briden's personal view was that COSOD II objectives would not be achieved without a large increase in funding as a result of, e.g., an increased emphasis on global change or other initiatives. Within the normal budget, only a slight expansion would be possible. Briden added that a \$0.5M increase in dues would be difficult for the UK at present. Passing over the section "Some Possible Additional Facilities", which he said that he would discuss later, Briden moved on to "Operating Modes and Management Structures". He felt that the goal of ODP was incompatible with a purely responsive mode. He would encourage *ad hoc* legs using other vessels, allowing any country to take the lead. However, the planning structure must not be fragmented.

Briden made the following comments on his recommendations. (Included as Appendix 2 and also listed in full in the Agenda Book, white pages 202-204; only Briden's brief comments are given in the minutes.) The recommendations fell into six categories.

- 1) Relation of ODP to international science: (i) the recommended scientific conferences should not be COSODs, which were neither open nor regular; (ii) continue bilateral liaison with other groups; (iii) rename ODP: International ODP.
- 2) Governance of the program: (iv) internationalize JOI, Inc.; (v) locate JOIDES Office outside US., on some kind of revolving basis.
- 3) Role of subcontractors: (vi) decentralize operating system.
- 4) Tendering for subcontracts: Briden commented that he was less sure that his recommendations on this topic [(vii), (viii) and (ix)] were right than he was about other recommendations. He said that it might not be good to have the Wireline Operator contract on a different schedule from that of the Science Operator, as suggested in the original report (Appendix 2 and Agenda Book, white page 202). Furthermore, as Baker had pointed out, it was unlikely that an institution will want to provide services alone, without science. With respect to recommendation (ix), there would probably be a penalty in moving that part of the Science Operator contract that relates to support of *JOIDES Resolution* from ODP-TAMU prior to 1998, because of the SEDCO contract.
- 5) JOIDES advisory structure: (x) PCOM should be more proactive and thematic; (xi) examine structure and terms of reference of thematic panels; (xi) change membership of advisory structure. In response to a question from Pyle, Briden said that ODP was thematically-driven and expressed the opinion that the thematic panels should push their themes hard and act as referees. A highly authoritative and impartial group would be required to decide who got what, perhaps a small group of "wise men", who might also be non-proponents.

6) Incorporation of new vessels: (xiii) announce terms and procedures for incorporation of new vessels; (xiv) *ad hoc* use of other drilling platforms was already under consideration by PCOM; (xv) determine scientific and technical requirements for vessel(s) post-1998 (assuming *JOIDES Resolution* would be primary vessel until 1998); (xvi) assess significance of a multi-vessel program. Briden stated that time was short, if a state-of-the-art vessel was required post-1998. He recalled that Heinrichs had proposed an NSF review in 1994-1996. Briden felt that that was not soon enough. A group (of PCOM) should start to specify requirements of the post-1998 facility as soon as possible.

Briden's conclusions about the effects of implementing his recommendations were listed (Appendix 2 and Agenda Book, white page 204). In order to facilitate discussion, Briden proposed going back through the six categories of recommendations, adding his suggestions for EXCOM action.

1) Relation of ODP to international Science

Briden felt that recommendations (i), (ii), and (iii) were not contentious; (ii) was happening already. He suggested that EXCOM could simply endorse them. Maxwell noted that IUGG met every 4 years. He asked whether Briden expected more at his proposed conferences than presentation of results. Briden replied that feedback was needed, but not resolutions that PCOM was constrained to accept. The conferences should feed scientific insights and enthusiasm into ODP. Dürbaum suggested holding the conferences in conjunction with IGC or other meetings (e.g., IUGS), rather than specifically with IUGG, as suggested by Briden. Austin reminded EXCOM that STRATCOM had recommended such meetings, but that EXCOM had not supported the idea. He felt that EXCOM had now come full circle.

Briden said that the visibility of ODP was a problem, both in terms of publications and scientific debate at conferences, which tended to be fragmented. Free and regular communication between scientists was deficient at present. Maxwell expressed the concern that only people already involved with ODP tended to attend ODP-related sessions at meetings. Bogdanov felt that the proposed ODP conferences should be independent of other meetings. Many meetings had large registration fees. It would be better if the ODP conferences were independent and free of charge. Austin stated that EXCOM had told STRATCOM that independent meetings of that type would be too expensive. Bogdanov suggested that the meetings could rotate between member countries, with each paying the costs in turn. Baker supported Briden's recommendation about conferences. They were important both for openness of ODP and for publicizing ODP. He felt that it was essential that these conferences be part of another (scheduled, scientific) meeting so as to involve other scientists in addition to those already involved in ODP. However, Bogdanov stressed the problems that some scientists had in obtaining funds. Furthermore, meetings to which ODP conferences would be attached would be specialized and would not cover all ODP themes.

Noting the need to interface ODP with other initiatives, e.g., global change, Kullenberg suggested combining (i) and (ii) and having a conference in combination with other initiatives. Dürbaum recalled that EXCOM had told STRATCOM that EXCOM should not be involved in organizing such conferences, because that was up to individual scientists. Now EXCOM was saying that perhaps it should be involved.

Briden said that he preferred that the ODP conferences be adjuncts to existing meetings, because that would result in larger audiences and also be cheaper. He preferred IUGG to IGC, because IUGG involved atmospheric sciences and physics of the oceans and would, therefore, allow interaction of ODP with other initiatives. Leinen supported ODP conferences as adjuncts to other meetings to avoid proliferation of meetings and minimize costs. Helsley also supported the idea. He stressed the importance of regularity of conferences for feedback and the need to

establish a mechanism to get such feedback from the scientific community to ODP. Boillot expressed French support. He added that, while EXCOM must make the decisions and vote on the principle, the details were also PCOM's responsibility.

Merrell asked how much such conferences would cost, emphasizing the need to take that into account. Austin estimated that the cost of a conference would be in the range of several hundred thousand dollars to \$1M. However, Heinrichs felt that it would be cheaper, ~tens of thousands of dollars, depending on the support provided. Maxwell agreed with Heinrichs. Merrell asked whether such conferences would replace COSODs. Austin noted that something of the kind was already happening. There would be an ODP thematic session at IGC in Japan in August, 1992, with a number of speakers. However, he asked how to get feedback into the advisory structure. Heinrichs suggested that the organizers could submit a report to PCOM. He added that proposed ODP conferences would not be replacements for COSODs. COSODs I and II had been useful. Another COSOD might be needed in 1994-1996. Merrell pointed out that a COSOD was a closed conference. Maxwell said that a workshop could be held, along with a symposium, at IUGG to give recommendations. He felt that Briden had raised the issue of conferences to get around the feeling that ODP was a "closed shop". If COSOD-type advice was required, there would be a need to go beyond a simple symposium. Heinrichs agreed with Kullenberg's suggestion to combine (i) and (ii); IUGG would cover large elements of global change. In response to a question from Baker, Briden said that he had envisaged the conferences as extra to, and not replacing, COSODs. Baker felt that ODP would have to sponsor ~50 invited scientists, and not just rely on who turned up, in order to have a focused meeting. That would cost ~\$100,000. Briden suggested that it could be co-sponsored with IUGG and, in response to a question from Austin, added that IUGG met every 4 years and that he did not feel that more frequent meetings were necessary. Bogdanov noted that ODP sessions already existed at, e.g., every IGC. He asked what was new about the recommendation to hold regular conferences attached to existing meetings. Separate meetings were required. Helsley agreed that sessions were already taking place at most meetings, but stressed that some should be identified as particular times for feedback. He preferred such conferences every two years. Austin explained that the IGC session was for showcasing ODP. It was outward-directed and would not cost much. The feedback function was very different. Such conferences would have to be organized differently and would cost more. Merrell added that attendees would also need to have an idea of ODP's scientific plans in order to give feedback.

Maxwell reminded EXCOM that recommendation (i) was that ODP would benefit from regular conferences and feedback. It was fairly general and encouraged things that were going on already. Austin agreed that much of it was already happening, e.g., the Indian Ocean synthesis meeting. A western Pacific synthesis meeting had also been proposed. However, Briden's recommendation (i) would cost more, and money would have to be taken from something else. Briden stated that he had made the recommendation because he felt that, at present, neither ODP's written nor spoken communications were good enough.

In response to a question from Merrell, Briden said that the matter should be referred to PCOM and suggested changing the wording of (i) from "EXCOM should explore the advantages of holding them during IUGG General Assemblies,..." to "PCOM should explore...". Austin cautioned that if EXCOM handed this to PCOM, EXCOM would have to provide guidance on timing and the money it was prepared to spend. Austin felt that the conferences should be annual. Moss suggested that PCOM could be asked to give cost options. Maxwell suggested a straw vote on the principle of holding regular meetings that provided feedback, rather than on the details. However, Baker suggested discussing each of Briden's recommendations and having a group review the issues overnight, returning with recommendations on which EXCOM could vote on the following day.

Merrell raised the issue of renaming ODP [recommendation (iii)]. Boillot responded that France supported two programs instead of one. It was the French view that two platforms would require two programs. ODP should remain open to a two-program option in the long-term future. Maxwell suggested deferring discussion of (iii). He asked Leinen, Merrell and Bogdanov to revise (i) and (ii) for discussion the following day. Dorman asked whether the reference to national drilling programs in (ii) referred to continental drilling or to marine programs. Briden replied that he had been thinking of marine programs, but that that could be extended. Dorman asked whether present linkages with other programs were adequate. Austin replied that they were; Pyle had done an excellent job promoting such liaisons.

2) Governance of the Program

Briden stated that his suggestions for dealing with recommendation (iv) were that JOI, Inc. should investigate legal and practical options and report at the next EXCOM meeting. Concerning recommendation (v), Briden suggested that EXCOM agree in principle and that JOI, Inc. should determine financial and other implications, again reporting at the next EXCOM meeting. Recommendation (iv) was complex, because JOI, Inc. was involved in matters other than ODP. International partners would not want to be members of JOI-BOG when it was dealing with those other matters. The international partners should be involved on an equal footing when JOI-BOG was discussing ODP. There were financial implications to (v) which JOI, Inc. should investigate. Dürbaum saw no need for recommendation (iv). He noted that EXCOM motions were legally endorsed by JOI-BOG, but that none had ever been changed. Therefore, it was EXCOM and the international membership of ODP that made decisions, not JOI-BOG. Maxwell explained that JOI, Inc. took EXCOM's advice on ODP. However, JOI, Inc. was legally responsible and JOI-BOG had to reaffirm EXCOM decisions. He agreed that, since JOI-BOG had never made any changes to EXCOM motions, EXCOM effectively made the decisions. Boillot stated that France wanted to internationalize JOI, Inc., if it remained the prime contractor. However, if JOI, Inc. were not to be the only prime contractor, the question would remain open. Merrell stressed that the members of JOI-BOG accepted legal responsibility for the drillship's activities (e.g., a blowout). He asked whether international partners wished to make themselves liable for such damages. In addition, he felt that either all countries would have to join JOI-BOG or none.

Pyle stated that JOI, Inc. did not know the financial implications of placing the JOIDES Office overseas [recommendation (v)]. Briden said that Baker had said that there would probably be additional costs associated with such a move. Pyle responded that telecommunications costs could be estimated, but that there might be other costs related to the sizes of the JOIDES Office proposals received. Rosendahl asked what % of JOIDES Office business was in the US. Austin commented on the large cost of sending documents by overnight courier. If the JOIDES Office was in, e.g., Japan, all mailings might have to be of that type and costs would rise. In response to a question from Dorman, Austin confirmed that the PCOM chairperson would accompany the JOIDES Office. Bogdanov felt that, based on his observations, DSDP/ODP had been very conservative over the last 10 years. He did not think that the present structure was suitable for >1 platform. He asked whether EXCOM should wait for new platforms to arrive or try to prepare for that eventuality in advance. Dorman asked whether, if the location of the JOIDES Office was determined by proposals, the fiscal problems would sort themselves out. Maxwell agreed, but noted that the location of the JOIDES Office had been based on rotation among institutions in the past. Austin commented that an advantage of rotation was that it continually involved new personnel. However, it was a disadvantage when long-term science was under consideration. Keeping the JOIDES Office within the US minimized that disadvantage. A less frequent rotation might be desirable if the JOIDES Office was to be located overseas. Helsley disagreed, feeling that rotation overseas would be no more difficult than rotation within the US. Dorman asked whether Briden had assumed rotation of the JOIDES Office, as opposed to a bid process, when writing his recommendations. Briden

replied that he had not anticipated that there would be a great clamor to compete for the JOIDES Office. It would be important for EXCOM to approve each location of the JOIDES Office; EXCOM seemed to play a small role at present. Maxwell explained that EXCOM did approve JOIDES Office locations, but that it was based on a rotation among US members. Briden responded that the point was, then, that EXCOM approval would become a more significant action in the future, if international locations were involved. Baker recalled that it was EXCOM that decided to rotate the JOIDES Office. Merrell noted that the rotation excluded operator institutions; he expected that that would also apply for international operators.

Maxwell felt that international rotation of the JOIDES Office was fairly simple, but that internationalization of JOI, Inc. [recommendation (iv)] was more complex. Briden agreed, adding that that was why he had suggested that JOI, Inc. investigate the options. Maxwell stated that EXCOM would ask JOI, Inc. to look into (iv). Dorman stressed that only the ODP-related business of JOI, Inc. should be internationalized. Maxwell agreed, adding that EXCOM would take up the matter of recommendation (iv) again at its next meeting. In the interim, JOI, Inc. should investigate the legal and practical options and report to the next EXCOM meeting.

Dorman wished to clarify that rotation of the JOIDES Office would involve rotation of the PCOM and EXCOM chairs. Maxwell affirmed that it would; he interpreted Briden's recommendation to mean that the present two-year rotation would continue, but that international partners would also be included. Helsley added that the JOIDES Office was currently rotating among eight US institutions; the suggestion was to add any international partners who wanted to host the JOIDES Office, excluding any who became operators. Dorman asked whether two years was too short. Austin thought that it might be difficult to attract the right people for longer periods. Dorman then asked whether rotation was the only alternative, or whether the JOIDES Office should be assigned on the basis of a proposal. Maxwell responded that it was important to know two years in advance where the JOIDES Office would be going. Westgaard stated that ODP would not last long enough to allow rotation of the JOIDES Office through all of the members and, therefore, supported a tendering mechanism. Maxwell replied that if EXCOM agreed in principle that the JOIDES Office should move, the mechanism could be defined later. EXCOM could decide where the JOIDES Office was to be at least two years in advance. Dorman said that he assumed that the JOIDES Office would move to the University of Washington as planned. Maxwell agreed, adding that the new system would come into effect after the University of Washington's tenure. Leinen suggested that the wording should not be that the JOIDES Office "should" rotate to non-US institutions, but that it "could" do so, because none of the international partners might want it. Maxwell agreed and asked JOI, Inc. to look into the implications. Baker asked whether the rotation period would remain at two years. Maxwell said that could be left to JOI, Inc. EXCOM agreed in principle; JOI, Inc. should examine the financial and other implications of rotating the JOIDES Office to non-US institutions and report to the next EXCOM meeting.

3) Role of Subcontractors and 4) Tendering for Subcontracts

Briden recalled that recommendation (vi) concerned the split of the Science Operator contract. For instance, engineering development might be separate from *JOIDES Resolution* science operations. Publications might also be decoupled; other institutions might want to bid for DCS development. This would prepare the way for multi-ship operation, because it meant that another ship could be combined without hanging onto it another engineering and publications operation. Baker pointed out that a country with a second drillship that wished to be a second science operator could be incorporated without changing the present system. There was no need to split the Science Operator for that purpose. Bogdanov felt that ODP was a US program and not international. In the past, the USSR had been invited, eliminated and re-invited by the US. He said that the present situation was the same as it had been in 1974. If, in future, ODP involved multiple platforms, including international platforms, then it would be truly

international. Russia could not be eliminated by the US if it had its own drillship. Briden's recommendation (vi) was a preparation for such internationalization. Maxwell noted that that also bore on later recommendations.

In response to a question from Eaton, Briden reiterated that he felt he had been wrong to separate the Wireline Operator from the Science Operator in his recommendations. He had separated them because ODP-TAMU's operation was so complex that it could not be set up for tender by September, 1993. However, it might be better to do all tendering at the same time than to move as fast as possible by tendering for the Wireline Operator first [recommendation (vii)]. Eaton asked why, if the wireline operation was to be put to tender, Anderson could not present his expanded plan for ODP-LDGO to EXCOM. EXCOM seemed to be saying that Anderson's plan could not be discussed, but that, at the same time, the wireline operation was "up for grabs". Heinrichs said that JOI-BOG had already agreed in principle to opening up subcontractor competition to the international partners.

Austin asked whether the motivation for devolution was to spread money around. Briden replied that it was not. He added that devolution was advisable, but not essential. Briden also suggested changing the wording of recommendation (vii) from "...international open tender..." to "...[international] tender to all JOIDES institutions...". There were risks involved in opening up subcontracting: there might be no interested parties or costs might increase (from existing favorable rates). However, this would never be known if the option was not investigated. Dürbaum noted that the contract between ODP-LDGO and Schlumberger also involved favorable rates, analogous to the low-cost ship contract. Anderson agreed, confirming that the cost to ODP was $\sim 1/3$ of what the oil industry would have to pay. He asked why October, 1993, was specified in (vii). Briden answered that he had felt that that was the earliest possible date. Dorman said that, based on experience with the operation of *Alvin*, it was not advisable to split systems engineering from operation of the asset. He asked whether ODP-TAMU could tell EXCOM what components could be split from the Science Operator subcontract. Merrell replied that the subcontract could be split, but that operations would be less efficient. Adding elements was not an issue, e.g., Wireline Logging was added at the end of DSDP and more could be added. Splitting was different. He felt that ODP-TAMU would rather bid in 1993, i.e., early, and get the contract for a number of years. Otherwise, it would be difficult to hire good personnel.

Helsley highlighted the importance of a mechanism to be adopted by organizations interested in some portion of the program and suggested that EXCOM devise such a mechanism. Merrell stressed that ODP-TAMU would need to know as soon as possible if it was to lose the subcontract in 1993 so that it can stop hiring, etc. Maxwell said that there seemed to be two parts to the proposal: one was that, if there are any subcontracts, they should start at the beginning of FY94 and run through the 10-year program; the second was that, if any JOIDES institution wanted to compete, it should let the organization know.

Heinrichs said that October, 1993, was the renewal date. Renewal was likely, but action on subcontractors should perhaps be delayed until renewal was certain. Heinrichs did not feel that October, 1993, was a "magic" date. There would probably be some major changes in structure of ODP, at least post-1998. These should probably be made sooner rather than later, but whether "sooner" meant 1994 was difficult to say. The issue was whether EXCOM was going to provide advice to JOI, Inc. as the prime contractor. JOI, Inc. should work with their subcontractors and lay out a framework for people to tender. There was a commitment made by NSF that, with renewal of the program, this issue would be examined. EXCOM could not redesign the program immediately. The best way for EXCOM to examine the issue and give advice to JOI, Inc. might be to set up a subcommittee to report within a short timeframe. Merrell said that another aspect was how to treat add-ons to the program. He felt that most

proposals would be for new functions, meaning that something else must be dropped. Merrell added that if EXCOM wanted to redesign ODP, it should begin at once. Heinrichs stated he could envisage JOIDES members coming forward with capital assets, such as TAMU had when it won its subcontract (e.g., a building) that would offset any short-term financial penalties associated with changing subcontractors. Before anyone could make such an offer, there should be some consideration of scale. EXCOM should avoid "Balkanizing" ODP, with a large number of small subcontracts. He felt that development engineering, wireline logging, and perhaps some aspects of third-party tools, were possible units that might be considered for rebidding. This, of course, must be looked at within the framework of a reasonable budget, involving modest growth. The commitment to examining the issue and creating a plan people could react to had been made by NSF, and in principle by JOI-BOG. The issue was EXCOM's role. Helsley thought that ODP was already operating in the mode of recommendation (vi), i.e., was already in subcontracted mode. Details of how ODP was subdivided were the responsibility of JOI, Inc. EXCOM should just endorse a subcontracted ODP and extend opportunities to re-bid to all JOIDES institutions.

Maxwell felt that an *ad hoc* EXCOM group was needed to provide guidance on how to proceed with subcontracting. ODP-TAMU and ODP-LDGO should be involved. EXCOM could then reconsider the matter at its next meeting. Merrell emphasized that, if EXCOM wanted to re-tender ODP, ODP-TAMU preferred that the whole operation be tendered, not just part of it. ODP-TAMU might choose not to bid on a small part of the program. ODP-TAMU could not operate a small part at the same low overhead rate for which it operated the whole program. Cost implications were immense. TAMU provided salaries and the building. If tendering was to be in 1993, ODP-TAMU needed to know soon. Kobayashi noted that the Japanese had strong opinions about third-party tools. Downhole tools produced by non-US partners had sometimes been improperly treated. Communications had been unclear at times. He proposed that, in the post-1993 phase, tools and instruments should be treated by formally-designated contractors. In addition, PCOM should decide on plans for the use of such tools far in advance to allow time to prepare for their use. Maxwell agreed that there was no doubt that this needed to be examined.

Maxwell proposed Dürbaum, Westgaard and Dorman as an *ad hoc* subcommittee to report on subcontract tendering to the next EXCOM meeting. Westgaard asked to be excused from the subcommittee and was replaced by Falvey. Briden asked whether any realistic bids for ODP could be put together for October, 1993. Baker replied that the original proposals for ODP had been put together in less than one year. Merrell noted that it took time to offer a new drillship. That was what had taken TAMU the most time. Heinrichs said that he would ask JOI-BOG to consider the matter. He thought that the *ad hoc* subcommittee should report before the next EXCOM meeting. Maxwell added that there were two parts to be considered: existing and new subcontracts. Austin pointed out that subcontractor changes also affected science planning, because PCOM had assumed that *JOIDES Resolution* would be the main platform at least until 1995. It would be damaging if the capabilities of *JOIDES Resolution* were not matched or exceeded by the new drillship. Baker stressed that EXCOM must be convinced that any changes it wished to make to ODP would be for the best. There was no alternative drillship with the capabilities of *JOIDES Resolution* that could be turned on in one year. Bogdanov countered that JOI, Inc. had not been informed of all details of the Russian drillship, which would be cheap to operate. Maxwell noted that Heinrichs would raise the issue before JOI-BOG and underlined the need to have something resolved prior to the June, 1992, meeting of ODPC. Dorman cautioned that knowledge of willingness to compete for subcontracts was needed; he did not want to have an empty competition. Briden concurred, suggesting that JOI, Inc. ask all members whether they were interested in bidding. Baker responded that JOI, Inc. would turn to EXCOM for advice. Merrell commented that EXCOM would also have to define the scope of the new program that was to be re-bid, so that the amount of money required was

known, and also the duration of the new program. Maxwell stated that EXCOM could meet a day ahead of ODPC in June, i.e., on June 15, 1992, to hear the report of the subcommittee.

Maxwell summarized EXCOM's action: a subcommittee (Dorman, Dürbaum and Falvey) would examine subcontracting [recommendations (vi) to (ix)] and report back to EXCOM in June, 1992, at a meeting held the day before ODPC. The subcommittee would address: subcontracting of existing functions, new subcontracts and mechanisms, timing, and whether there was any interest among existing ODP members in bidding. Maxwell appointed Dorman as chairperson. In response to a request from Falvey, Austin said that the JOIDES Office would help the subcommittee with secretarial support.

5) JOIDES Advisory Structure

Briden characterized recommendation (x), concerning making the advisory structure more proactive, as the most important in this category. Recommendation (xi) was consequent on (x), while (xii) was perhaps not very urgent. Maxwell did not feel that there was a time constraint on these recommendations. They were also PEC III issues. He suggested deferring consideration of them until EXCOM heard the PEC III report the following day. Briden agreed, adding that his suggestion for dealing with these recommendations was to set up a review of the advisory structure to report on its performance and on options for change, to report to EXCOM at its January, 1993, meeting. Baker asked that a review of PEC be included, now that there had been several PECs. Maxwell concurred, but deferred further discussion until EXCOM had heard the PEC III report.

6) Incorporation of New Vessels

Briden outlined his suggestions for dealing with recommendations in this category: (xiii) JOI, Inc. should report back in June, following which terms and procedures would be announced; (xiv) EXCOM should endorse; (xv) EXCOM should defer this item to PCOM; perhaps a Technical Requirements-DPG should be set up, working to an earlier schedule than specified in the recommendation; (xvi) endorse and incorporate in (xiii). Briden emphasized that a hiatus in ODP must be avoided. Merrell felt that that requirement would make tendering unfair to any bidder other than TAMU. A hiatus would be unavoidable if *JOIDES Resolution* was to be replaced after October 1, 1993. Briden responded that he was not assuming that a change of operator would necessarily mean a change of drillship. However, Merrell noted that it might. Dorman stated that his subcommittee would take as a condition that there would be no hiatus, whether bidding was in 1993, 1998, or some other time.

Austin pointed out that the LRP contained a complete technical specification for the 90's. If EXCOM wanted more, it would have to give PCOM a mandate for such considerations. PCOM had fed into the LRP, but Austin did not feel that EXCOM liked the LRP. Heinrichs said that he liked the LRP, but that he did not think that it covered all technical specifications. Austin doubted that PCOM was configured for determining technical specifications. Heinrichs suggested that PCOM could find experts. Austin agreed, but added that that would involve budgetary impact.

Eaton asked whether there were existing procedures for modifying ODP, which Anderson's report on wireline logging had violated. Briden said that discussion of procedures for change began with the question of how to incorporate NEREIS, which would change the balance of ODP. There was a procedure, but it must be restated. Rosendahl asked how an extra drillship could be operated, when ODP could barely afford one. Briden said that his report included discussion of options, e.g., NEREIS could be operated for 3 months/year, provided that the

new host paid an extra amount and that there was an 15% increase in contributions. However, 6 or 12 months operation was not achievable without a major increase in funds.

Maxwell stated that all agreed with (xiv) and that EXCOM should endorse it; (xvi) could be deferred. He asked the subcontracts *ad hoc* subcommittee to include (xiii) and (xv) and return with comments the following day. Austin expressed his willingness to get PCOM to empower a body to address (xv). Maxwell preferred to wait until the subcommittee had reported. Dorman stated that he took the word "encourage" in recommendation (xiv) to mean that the thematic panels should encourage PCOM.

Maxwell commended Briden for doing a very thorough job. EXCOM produced the following consensus.

EXCOM Consensus

EXCOM thanks and congratulates Jim Briden for his stimulating report. EXCOM agrees with the general ideas developed in this report, and wishes to study carefully its recommendations during its next meeting. EXCOM encourages all efforts for improving the management and efficiency of the drilling program and also its internationalization.

REPORT ON STATUS OF POTENTIAL DRILLING FACILITIES

France (NEREIS)

Cailliau explained that NEREIS should be considered a European, and not French, ship for light drilling and on-station experiments (Appendix 3). NEREIS should be a high-tech facility capable of carrying out sampling, downhole instrumentation, seafloor and other experiments, and observations. Penetration of the seafloor was required by all of these themes. Some penetration could be achieved by cable-deployed drills or piston corers, but deeper drilling would be required for some targets. NEREIS would, therefore, be a drillship capable of handling up to 6000 m of drill pipe, HPC-coring to 300 m in soft sediment, and rotary drilling to 50 m in hard rock. Dynamic positioning and heave compensation would be required.

The status of NEREIS was that a general European agreement on the idea and concept had been obtained. A new ship would cost ~\$100M. Most potential partners were not able to identify financial contributions in the short term. France might be able to pay $\frac{1}{3}$ of the cost in 1994, but 2-3 additional countries would be needed. The cheaper alternative of converting an existing ship was under investigation. A possible scenario involved two drillships (*JOIDES Resolution* and NEREIS), two scientific objectives (hard and soft rock), and two programs (International ODP and European NEREIS program) (Appendix 3).

Maxwell asked about the timing of NEREIS. Cailliau replied that two studies of ship conversions were underway. He could not comment on one, but results of the other would be available within a few weeks and its conversion would cost ~\$20-30M. Conversion would take place in 1994-1996. However, it would never happen as a purely French program. Other partners were required. Maronde asked whether there had been any indications of financial commitment. Cailliau answered that the European Economic Community might commit ~25% of the total. In response to a question from Maxwell, Cailliau confirmed that he was the best person for the *ad hoc* EXCOM subcommittee to contact for information on NEREIS.

Russia

Bogdanov began by announcing that the USSR Academy of Sciences had become the Russian Academy of Sciences and that Russia would pay the fee for membership of ODP. A letter from Bogdanov to Maxwell about the Russian drillship was handed out. Bogdanov recalled that the USSR had been eliminated from IPOD in 1980 and denied entry into ODP in 1987.

Consequently, the then-USSR decided in 1987 to build its own drillship, which would differ from *JOIDES Resolution*, and have the goal of drilling super-deep holes (4500 m holes in hard rock in water depths of 4000 m). The ship would be capable of Arctic drilling and be able to remain on station for 5 months. The drillship would also carry two submersibles to examine nearby geology. At the same time, Bogdanov believed that there would be another ship for sediment study with a riser (the main proposed ship has no riser); two sister ships already existed, one of which was already working in the Arctic. One of the ships was able to drill 500 m of sediment with a 500 m riser. The main drillship was about 25% completed and would be afloat by the end of 1992. Its drilling equipment was ready. The Russian ODP and national drilling program groups had now been joined; Bogdanov was responsible for both. Russia would like a partner to help finish drillship construction.

In response to a question from Rosendahl, Bogdanov said that it was difficult to be specific about how much money would be needed to complete the drillship. He estimated that it would cost ~\$3M, at the official exchange rate, if it was built in Russia. He could not be certain about future developments, but construction was continuing and completion would be cheap if funded from outside Russia. Erzinger commented that the Russian drillship might be capable of meeting LITHP's deep-drilling objectives, which no western ship could achieve. Dorman asked for clarification of Russia's priorities, as expressed in the letter to Maxwell. Bogdanov responded that Russia had money for ODP membership for 1992, but 1993 was uncertain. If financial constraints forced a choice between ODP membership and completion of the Russian drillship, Russia would choose their drillship. He added that, if Russia built the drillship alone, the Russian scientific community would want it all to itself.

Japan

Miki thanked EXCOM and Maxwell for the opportunity to attend. A STA report, "New Deep Sea Drilling Program in Japan", was handed out. Miki explained that STA planned and promoted science and technology policy and coordinated various fields. An organizational chart for ocean R&D in Japan was included in the handout. STA's budget for ocean science and technology was \$100M. The emphases in ocean research were: 1) deep-sea exploration (development and operation of Shinkai 6500 submersible, an ROV with 10,000 m depth capability); 2) ocean observation and research (JGOFS work and, in addition, an action plan on Pacific Ocean research agreed upon the previous week by the US President and Japanese Prime Minister); and 3) coastal ocean R&D.

Cost of the proposed Japanese drillship would be about twice the cost of the Shinkai 6500 submersible. Significance of deep-sea drilling research and development of deep-sea drilling systems, together with research to be carried out using the proposed drillship, were outlined in the STA handout, as was the development schedule of the proposed drillship. During FY92, ¥50M would be spent. Construction was scheduled to begin in late 1994 and earliest operation (Phase I) with a 2000 m riser would be in 1997. The Phase II system, with a 4000 m riser, would be operational by the year 2000. Budget constraints or technical difficulties could delay Phase II. Negotiations with the Finance Ministry would begin in the fall, so 1992 was critical. Miki said that he would welcome foreign encouragement for expenditure on ocean drilling by Japan and wished for good relations with JOIDES. Principal specifications of the proposed drillship and a list of technical development items were given in the handout. Miki noted that the final design might be smaller. He added that consideration of software should be

accelerated. The drillship would probably be operated through JAMSTEC. The Japanese drilling program was envisaged as being "borderless"; various forms of international participation would be accepted. Japan was opening the door of its R&D system more to the international scientific community. The new drillship program might become a good test of international cooperation. Miki hoped for strong international support and cooperation.

Erzinger asked why penetration was limited to 3500 m. Kobayashi replied that 3500 m was thought to be the maximum penetration achievable in 6 months on site. The drillship would be unable to operate around Japan in the winter months, when the weather would be too severe for its dynamic positioning system. The technological limit to penetration was 6000 m in 4000 m water depth. In response to a further question from Erzinger, Kobayashi said that the drillship would operate around Japan initially, but would go further afield in later years. Leinen asked how long the purely Japanese phase would last and whether the drillship might move into, e.g., the Indian Ocean. Miki answered that an international science board would have to be set up to consider such issues. Merrell asked about projected operating costs. Miki answered that these were expected to amount to \$30M/year.

USA

Merrell reported that he knew of no plans to build any US drillships. The *Explorer Seven Seas* and the *SEDCOIBP 472* were operating out of Galveston. They had riser capability (~2000 m was state-of-the-art). Their day rates were ~twice that of *JOIDES Resolution*. The day rate of a semi-submersible, which would be needed in order to drill a very deep hole, was ~three times that of *JOIDES Resolution*. Merrell noted that *JOIDES Resolution* was co-owned by UK and France. It could drill with a riser, but would require modification (the riser was stored where the lab stack was located). *JOIDES Resolution* would require renovation in 1998, at some cost to ODP. Increases in the day rate for *JOIDES Resolution* have been < inflation.

In response to a question from Leinen, Merrell said that the renovations to *JOIDES Resolution* in 1998 would probably cost ~\$2M. Actual cost would depend on whether a riser was desired. *JOIDES Resolution* could remain on station for a year with resupply every two months. In reply to a question from Dorman, Merrell said that there was yard work scheduled for 1994, but that that was part of the day rate. Rabinowitz added that such yard work was supposed to be carried out every four years, but that extensions could be obtained for almost a year beyond that time.

Other

Austin stated that OPCOM had recommended a feasibility study of additional platforms. A consultant, H. Zaremba (whose name had been obtained from TEDCOM), had been contacted and had attended the September, 1991, TEDCOM meeting and Victoria port call. A draft proposal had now been received from Zaremba. OPCOM allocated \$100,000 to the feasibility study. The study would take 90-180 days. Zaremba had acknowledged that a great deal of equipment was available, but he is interested in a dependent rig system that can be deployed from *JOIDES Resolution*. Selected PCOM, panel members and others would review the proposal. Specific programs for which additional platforms had been considered by PCOM were A&G and NJ/MAT. Both required shallow-water drilling capability. It is possible that \$1.7M of OPCOM funds might be left over in 1993 for additional platforms. Proponents of NJ/MAT (Leg 150) had submitted a proposal to NSF to carry out onland drilling. In addition, a potential extension of Leg 133 drilling on land across the Great Barrier Reef was under consideration by Australia and UK.

521. Membership Reports and Status of ODP Renewal

CANADA-AUSTRALIA CONSORTIUM

Falvey informed EXCOM that the major event since the last meeting had been the Victoria port call in mid-September, 1991. There was a fairly extensive report on the port call, which had significant impact on Canada's renewal proceedings. Canadian renewal for 5 years, however, was still under review.

In Australia, the ARC granted a 3-year renewal in December, 1991 (for CY92-CY94). Ministerial approval, the final step, was virtually certain. During the next six months, the Australian ODP Secretariat would move from the University of Tasmania to either the University of Sydney or the University of New England; the decision on which institution would host the secretariat would be made in early February. The Bangkok Conference on Sustainable Development in the Pacific would be held on 9-12 March 1992. It would include ODP presentations, a poster session on ODP, and also the C-A Board of Management Meeting. In conclusion, Falvey noted that the *R/V Rig Seismic* now had a 240-channel MCS system, which could be used for ODP site-related surveys.

EUROPEAN SCIENCE FOUNDATION CONSORTIUM

Westgaard stated that no decision on ESF's renewal had yet been made. A formal letter had been sent by ESF to the consortium members asking for their responses to renewal. No responses had yet been received, but no serious problems were apparent. There might be some changes in the scales of contributions; the Nordic group would contribute 50%. The review report had been printed and sent out. A workshop entitled "Drilling toward the 21st Century" would be held in Copenhagen on May 6-8, 1992. Fratta added that ESF had received the official letter from NSF and would answer in a positive way, with the proviso that no agreement had yet been signed between ESF members. In response to a question from Austin, Westgaard said that the Copenhagen conference would not be critical to renewal.

FRANCE

A French position paper is attached (Appendix 4). Boillot reported that an evaluation group, made up of people not involved in ODP, had studied: the quality of ODP's science program and potential for the future (which was not questioned and received a good evaluation), technology, and organization and management. The consensus in France was to continue ODP membership for 3-4 years, but also to recommend that ODP focus its activity on a small number of high-priority themes, e.g., paleoclimates, deep structure of oceanic crust and sedimentary basin evolution. Regarding the organization of ODP, France suggested splitting the duties of PCOM between two committees: a "permanent COSOD", Scientific Committee to consider long-term issues and strategy, with a PCOM to consider short- and medium-term planning. In addition, France favored at least two separate, but coordinated, international drilling programs. Discussion by the Comité Directeur for ODP of the Briden report is also summarized in Appendix 4. Boillot stated that NSF wanted MOUs signed at the end of 1992. However, the French attitude depended on the conclusions of the Briden report and related discussion at the next EXCOM meeting. France could not respond to NSF's letter before then. Boillot noted that the Anderson proposal for wireline logging was not on the agenda for the present meeting, but was to be considered by PCOM, etc. France was interested in the proposal to expand activities to different countries and expected to discuss the issue at the next EXCOM meeting.

Cailliau commented that France could sign an intent to participate in ODP, but had a problem with some details. Boillot agreed, adding that France saw the need to participate in ODP. The question was only that of the evolution of the organization. France would have no difficulty participating, if EXCOM accepted the major conclusions of the Briden report.

GERMANY

Dürbaum stated that Germany had been happy to host this meeting and the August, 1991, PCOM meeting. Several DFG personnel were attending the EXCOM meeting because of its importance to Germany's renewal decision.

The KTB borehole had reached a depth of over 0.5 km and should reach 6 km by mid-February, at which point the hole would be cased and drilling would recommence ~20 March, 1992. The German ODP meeting would be held in Hamburg on March 4-6, 1992. Dürbaum extended an invitation to attend and offered to send copies of the minutes. The purpose of the meeting was transfer of German ODP results to the rest of the scientific community. Germany had been pleased with the synthesis meetings (Indian Ocean and upcoming West Pacific). *R/V Sonne* had been completely rebuilt and lengthened by 10 m. A MCS survey of the Iberia Abyssal Plain for Leg 149 (NARM non-volcanic) had been completed in October/November, 1991. A South Atlantic regional survey had revealed interesting changes in composition of oceanic crust.

Maronde reported that the "brown book", which would form the basis for German discussions on renewal, had been published by DFG in August, 1991. A short discussion at the the Senate Joint Commission on Earth Sciences in DFG, held at the beginning of November, 1991, covered results of the July, 1991, ODPC/EXCOM meeting and confirmed Germany's positive attitude toward renewal. Germany would try to answer NSF's formal letter soon. Germany had a problem with article 5 in the MOU, which concerned intellectual property rights. Maronde hoped that difficulty could be solved. The final decision would be made in May, 1992. DFG had added two projects to its 1991 budget, which now included 39 projects at DM3.7M.

JOIDES EXCOM

Wednesday, 15 January, 1992

UNITED KINGDOM

Briden informed EXCOM that the UK review had been completed and the report had gone to the NERC Council in November, 1991. Renewal had been approved subject to successful negotiations of MOUs. He introduced L. Kay, who would be running the UK ODP office.

Overall, Briden felt that the marine geosciences in the UK were currently going well. He stated that rules had been changed to allow scientists to apply for funds to collaborate in Europe. A contract for a high-temperature resistivity tool was underway in the UK. Briden noted that R. Kidd had put a lot of effort into the Indian Ocean synthesis meeting and would appreciate the fine words spoken about it at EXCOM. A site survey cruise on the east Greenland margin (NARM volcanic) was being built into a *R/V Charles Darwin* cruise scheduled for summer, 1992. Briden announced the beginning of a mid-ocean ridge program, which was well-coupled with InterRIDGE, though the program did not receive as much money as had been hoped for. The funds would probably be spent on swath bathymetry hardware. On January 9, 1992, a meeting had been held to develop a program in paleoceanography.

The rebuilding of *R/V Discovery*, which was being lengthened by 10-11 m, was almost finished, with delivery scheduled for May/June, 1992. *Discovery* would then go to the

Southern Ocean for a JGOFS-related program. BIRPS had completed circumnavigation of the UK with deep seismic reflection surveys and had also surveyed the Madeira Abyssal Plain. During the week following EXCOM, BIRPS would survey across the Banda Sea to link up with *R/V Rig Seismic* surveys and complete a traverse into Australian waters.

Maxwell welcomed the good news that the UK had formally renewed its membership in ODP, being the first full partner to do so.

JAPAN

Kobayashi reported that the first meeting of the Special Committee for Deep Ocean Floor Investigation of the Geodesy Council was held on 18 December 1991, to evaluate the performance of ODP and to examine the possibility of its renewal. A progress report of nearly 200 pages was prepared for the meeting. The report comprised an administrative report on both domestic and international matters, a summary of scientific results, and statistics of responses by Japanese shipboard participants and the general Japanese scientific community to a questionnaire. Reviews of four outside scientists were also included. This first meeting reached no final conclusions, but the general attitude of members appeared favorable to renewal.

A domestic conference on recent progress in ODP was held in late November, 1991, with almost 100 participants. The Japanese scientific community was very interested in working further on long-term borehole measurements, especially seismometers. It had been proved by results from Hole 794D (Leg 128) in the Japan Sea that measurements at the bottom of holes yielded much better signals, particularly from long-period seismic waves essential to global network studies. ODP's long-term plans should include use of the drillship for such long-term experiments. Japan would request more formalization of long-term measurements in the post-1993 ODP.

The new Japanese magnetometer for A&G legs and beyond had almost been completed. Kobayashi hoped that there would be enough time and sufficiently good hole conditions to test the magnetometer on the A&G legs.

In response to a question from Helsley, Kobayashi confirmed that noise levels were lower when long-period seismometers were placed downhole. Helsley asked that EXCOM return to the issue of OSN. Maxwell replied that it could be addressed under *Old Business*.

RUSSIA

Bogdanov stated that, in general, the Russian scientific community was satisfied with the first half-year of its participation in ODP. A conference was planned at which cruise participants would present scientific results. Russia was conducting some site survey work and hoped to submit more proposals. Bogdanov hoped that he would have a more full report next year.

Maxwell pointed out that Bogdanov had raised the issue of travel funds for Russian scientists with Baker. Maxwell wished to raise the issue before EXCOM so that all JOIDES members were aware of it. Bogdanov explained that Russian scientists had difficulty raising travel funds. Beginning January 10, 1992, Aeroflot had raised its prices by a factor of 10. Bogdanov had asked JOI, Inc. to assist by applying to a NATO fund that had been set up to support travel of Russian scientists. Without such assistance, Russia would only be able to provide funds for travel of cruise participants, but not for travel to panel meetings. Maxwell noted that there were no objections from EXCOM members and instructed JOI, Inc. to proceed with the request.

UNITED STATES OF AMERICA

Heinrichs began by noting that the final FY92 Ocean Sciences budget was \$178.8M, compared to \$164.8M in 1991 (Appendix 5). ODP received a 4% increase, to \$36.4M. The Ocean Sciences budget was increased by 8.5%, compared to the requested increase of 15%. The overall NSF research budget was increased by 10%. Antarctic logistics funding had been shifted from NSF to the Department of Defense.

ODP-related field programs in FY91 were: EPR OBS refraction and *Alvin* surveys, Antarctic margin MCS, Cascadia, Marquesas and Kane Transform. FY92 field programs were: Hess Deep, EPR *Alvin* survey, Ceara Rise, Barbados Ridge (3-D seismics) and Oregon margin. One FY93 program had already been funded (Vema Transform).

Regarding renewal, letters to international partners had been received (see schedule, Appendix 5). NAS had set up an *ad hoc* committee to review ODP, which met in November and also in December, 1991, at AGU. The report had been completed and was favorable. It made some suggestions about international management and the top-down/bottom-up issue in addition to internal US matters. NSF would receive the report at the end of January, 1992, and it would be available to those who wanted copies. The NSF review panel would hold its final meeting in March, 1992. NSB would give final approval in August, 1992. NSF sought a 10-year renewal in principle, with a commitment to 5 years and approval to spend specific funds for 4 years (FY93-FY97). The new MOUs should be signed around the end of 1992 or in early 1993. The FY92 budget, approved at \$41.4M, was increased by \$167,000 (independent of OPCOM funds).

Briden asked whether EXCOM was happy with the development of the 4-year program plan (FY93-FY96). He found it curious that it was driven by NSF rather than JOIDES. He asked whether it was under control or was being rushed. Heinrichs replied that the 4-year program plan was not driven by the renewal process. He thought that it was not necessarily needed by March 15 (as previously intimated), but that it would be needed by June. Austin disagreed, noting that he had been informed by NSF that mail review of the 4-year plan would be needed by mid-March. Briden reiterated that the 4-year plan should be done well and not rushed. He also asked about the status of OPCOM funds, pointing out that it was now 3.5 months into FY92 and it was still not known whether those monies would be available. Heinrichs replied that it had always been expected that the proposal for OPCOM would be received early in the operating year and that it had, therefore, never been envisaged that the money would be available on October 1, 1991. The money was not yet forthcoming because of uncertainty about international partner contributions. The Russian contribution for FY92 had still not been received. Another reason for the delay was that the NSF budget was not approved until late December.

Pyle circulated a handout outlining the JOI/USSAC report. He noted that Leinen was the first lecturer in this year's distinguished lecturer series.

522. Old Business

POTENTIAL NEW MEMBERS

Baker reported that IOC had been trying to put together a coalition of developing countries to participate in ODP. He introduced Kullenberg.

Kullenberg observed that he was happy to be able to attend the meeting. He characterized ODP as a leading example of how a successful program should be organized. IOC had been

sounding out interest in other countries. The key point was to reach the right decision-makers in those countries. Participation would be a question of national priorities, national security and internal debates. Generation of interest in the ocean was a struggle. At the same time, global change was a problem of political and public concern. It was up to the scientific community to help provide insights, knowledge and answers. At present, two framework conventions were being developed (one each on climate on biodiversity) for presentation to the UN Conference on Environment and Development in Rio de Janeiro in June, 1992. Additional funding would be closely related to both of these frameworks. It was, therefore, important to acknowledge the need to carry out research to address uncertainties and not avoid the issue. ODP was addressing relevant topics. Kullenberg wished that to be brought to the attention of those preparing the conventions and the Rio conference. Within the big international financial organizations, e.g., the World Bank, a consortium had been arranged, referred to as the Global Environment Fund, to which large amounts of money had been donated by many countries. This was a reflection of the great interest in this problem among those countries, which included those represented by EXCOM members. The need to study global change was emphasized at last year's London summit. That was where the driving forces on the international scene were coming from. ODP must make itself felt. It was the one example in the earth sciences where concentration of effort had been enabled by a facility. It was important to maintain ODP and, if possible, to enlarge its support.

IOC was attempting to find strong voices in science in each developing country to influence decision-makers. With the help of ODP-TAMU, IOC had assembled an information package and sent 200 letters to scientists. To date, 60-70 replies had been received from China, Brazil, Argentina, Chile, India, Pakistan, Papua New Guinea, Malaysia, Africa (weak response), Caribbean, Indian Ocean and Mediterranean nations and even Pacific Islands. Responses had been positive. Kullenberg asked whether EXCOM could provide any advice. The next step would be to distribute the information package, to be followed up by visits to some countries, perhaps including some JOIDES personnel. It was vital to get to the governments involved and to be able to present strong intellectual arguments. The aim was to establish a third-world consortium funded from development funds. The rationale must be presented strongly, because ODP would be prioritized along with other programs requiring development funds; the need to prioritize research might be questioned. Kullenberg stated that IOC planned to use technological development and environmental decisions as the focus for its arguments. It was felt desirable to support some of the third-world scientists to attend IGC. Kullenberg had discussed that with the Japanese.

Maxwell commented that IOC seemed to be making progress. He added that JOI, Inc. and JOIDES would be pleased to assist.

523. Summary of Scientific Results, Leg 140 (Hole 504B)

Erzinger, Leg 140 co-chief, explained that Hole 504B represented the best opportunity for ODP to achieve a major goal that had eluded drilling programs for over 20 years: coring deep within the oceanic crust. This goal had been repeatedly emphasized as a top priority by the JOIDES Ocean Crust Panel and LITHP, and by COSODs I and II. Important objectives of the study of oceanic crust were the layer 2/3 boundary and the Moho. A major step toward the goal of coring and logging the transition between the sheeted dike complex of Layer 2C and the gabbros of Layer 3 was within the reach of the next drilling leg to Hole 504B. Layer 3 gabbros had never been sampled *in situ*, so coring and logging the transition would provide fundamental information regarding the physical, hydrological, seismic, and magnetic nature of Layer 3, and the role of gabbros in the mineralogical and geochemical evolution of oceanic crust. Sampling the diabase/gabbro transition would be a critical step in further verifying and/or refining the ophiolite model for present ocean crust.

Drilling at Hole 504B has had a long history. Junk left in the hole and concerns about casing led to abandonment of Hole 504B for several years after Leg 111. Subsequently, (engineering) Leg 137 cleaned the Leg 111 junk, but left more. Leg 140 cleared the hole of Leg 137 junk and deepened Hole 504B to 2000.4 mbsf. Hole 504B was now the deepest ODP hole.

On Leg 140, a week to 10 days was allowed to clean out Leg 137 junk. If cleaning was not completed during that period, the remainder of Leg 140 would have been spent at Hess Deep. Commercial fishing tools did not work. Finally, a home-made ("double dog") fishing tool was designed and fabricated and the junk was fished on the last fishing run before *JOIDES Resolution* was due to depart for Hess Deep. Erzinger praised the hard work of SEDCO personnel. Normal RCB coring was used to deepen Hole 504B. The rate of penetration when drilling was terminated was 2 m/hour with normal torque. Hole 504B remained stable, with negligible evidence of hole ellipticity and backfill problems, and was left open and clean.

The temperature log showed that Hole 504B was underpressured at the interface between sediment and pillow lavas, and was sucking water in. Temperatures had fallen and risen between legs at Hole 504B, suggesting that the hole was "breathing". The temperature gradient was $\sim 61^{\circ}\text{C}/\text{km}$ with a temperature of $\sim 200^{\circ}\text{C}$ at the bottom of Hole 504B. Rocks at the bottom of the hole were still dikes (dolerites and diabases); no gabbros had yet been encountered. Field evidence, from submersible observations and ophiolites, suggested that the layer 2/3 boundary varied in thickness from a few meters to 100 m and comprised mixed dikes and gabbros. Greenschist facies rocks, of relatively uniform chemistry, were recovered. Their alteration indicated that, if the ophiolite model was correct, the bottom of the hole was very close to gabbro. One chemical indicator, zinc, changed drastically downhole. Its concentration was constant down to the depth where Leg 140 drilling began, but decreased in the zone of Leg 140 drilling, suggesting that this region was the source for zinc in hydrothermal fluids. Seawater drawn down into the crust reacted with rock at high temperature in the zone of maximum element solubility. Zinc was the most mobile element and the first to be leached. It was expected that further drilling would reveal that copper would be the next element to vary in concentration downhole.

A prominent seismic reflector (X-reflector) lay 50-400 m below the base of Hole 504B and could represent the layer 2/3 boundary, providing a good rationale for deepening the hole. (It had been thought that the layer 2/3 boundary was a faint reflector higher in the section, but that was drilled and shown to be simply a porosity decrease.) Oceanic crust was relatively thin at Hole 504B ($\sim 4\text{-}4.5$ km versus, more usually, 6 km) and, therefore, *JOIDES Resolution* could reach the mantle at that site, especially since drilling rate would increase in gabbro.

Erzinger appreciated having been made a co-chief and felt that ODP was a very professional program. He highlighted two problems. The number of personnel available for logging operations was insufficient; the ODP-LDGO logging scientist needed an engineer on board to work on ODP-LDGO tools, if they were present, because the Schlumberger engineer was only responsible for Schlumberger tools. In addition, a third-party tool had been present, but there was nobody on board who knew about it. A third-party specialist should be on board for such tests.

Discussion

Bogdanov asked how many dikes had been encountered and their dip. Erzinger replied that ~ 15 dike margins had been drilled, dipping at 70° . Dürbaum asked whether a near-bottom refraction survey had been performed in the area. Austin replied that there had been no such survey, but that LDGO sonobuoy data had been reinterpreted recently and suggested that the layer 2/3 boundary was less than 100 m below the bottom of Hole 504B. In response to a question from

Beiersdorf, Erzinger said that the rate of penetration at the bottom of the hole had been 2 m/hr, or 15 m/day including trip time. Core recovery rate was ~15%, but depended on grain size: recovery rates varied from 70% in coarse-grained diabases to 0% in fine-grained chilled margins. The material tended to form disks, 2 cm thick. This hindered recovery with RCB coring. There were plans to improve the core catcher. Bogdanov felt that, though it would not affect operations at Hole 504B, it would in future be better to choose locations for drilling oceanic crust where sheeted dikes were absent, since drilling them wasted a lot of time. He added that drilling 15 m in a single dike would produce rocks that were all the same and, furthermore, dikes could also continue into the gabbro layer. Erzinger responded that the rocks recovered from Hole 504B had not been all the same. Austin pointed out that drilling at Hess Deep would do what Bogdanov suggested.

524. Ocean Drilling Program: Recent Past, Present and Near-term Future through 1993

FY92 AND FY93 BUDGET AND PROJECTS

Heinrichs showed projected ODP budgets (Appendix 6). The FY91 budget included a fuel supplement from NSF of \$0.4M. Basic projections for FY92-FY94 (Appendix 6.1) were based on 7 international partners and a 7% increase in international partner contributions in 1994. JOIDES LRP estimates were used for projections.

Though a commitment had been received from the Russian Academy of Sciences to continue in ODP in 1992, its contribution of \$2.75M had not yet been received. If Russia withdrew, there would be no LRP supplement (OPCOM money) and by FY94, the US would be paying 61% of ODP's costs (Appendix 6.2). If the OPCOM money was retained, with only 6 international partners, the US would end up paying 63% in FY94 and, furthermore, the US contribution would have to increase by \$4.5M from FY92 to FY93 (Appendix 6.3 and 5.4). Russia would not know whether it could remain a member until February, at the earliest, and there could, therefore, be no decision on OPCOM funds until then.

Discussion

In response to a question from Rosendahl, Heinrichs said that the US contribution would be >60% with any 6-partner scenario. It would be in the 50%'s if there were 7 international partners. Replying to a question from Maxwell, Heinrichs stated that ODP could continue to operate with 6 international partners and no OPCOM funds. Dürbaum asked whether BCOM would consider the scenario of ODP ending, since that would require a different budget for FY93. Heinrichs answered that NSF had not requested that. Rosendahl asked whether a potential rise of the US contribution to 60% or more would hinder attempts to internationalize ODP. Heinrichs acknowledged that a higher US contribution would strengthen US management of ODP. He added that BCOM should retain the assumption that there would be 7 international partners as the primary model. A 6-partner model should be an alternate. Austin cautioned that DCS, additional platforms and high-latitude support vessels were "big-ticket items" and could not be fiddled with without major changes in scientific planning.

PROGRAM MANAGEMENT REPORT

Budget Issues

Pyle began with a wrap-up of FY91. Budget overruns had been resolved with the help of a \$167,000 increment from NSF. There would be no impact on operations. The \$1.17M remaining from the fuel fund would be carried over to FY92 and was not a windfall.

Moving on to FY92, Pyle reported that BCOM had approved OPCOM's recommendations and a proposal had been submitted by JOI, Inc. The proposed study of additional platforms would probably be funded regardless of availability of OPCOM funds; the proposal had been received from consultant H. Zaremba in January, 1992. In general, as long as there were no cuts in funding for FY92, no problems were envisaged (with fuel, day-rates, etc.).

For FY93-FY96, preparation of the 4-year program plan was underway and a "budget outline" had been submitted. BCOM would meet in Bonn following EXCOM. The schedule was ambitious (Appendix 7) and put pressure on PCOM Chairperson Austin to produce a 4-year science plan quickly. Budget estimates were being prepared in parallel with work on the science plan, rather than following completion of the science plan. In FY93, the plan involved DCS deployment, ice support vessel and perhaps an additional platform (for NJ/MAT).

Management Issues

Pyle reported that a DCS *ad hoc* review held at ODP-TAMU had concluded that more experience was needed with DCS IIB in addition to Leg 142. PCOM had since scheduled Leg 148 as a DCS IIB test. The review also stressed that DCS III was vital and recommended that design work be continued, but that construction be deferred.

High-temperature tools continued to be a focus of effort. Leg 139 (Sedimented Ridges I) had successfully adopted a "beg, borrow, steal" strategy. Leasing and development were on course with JAPEX, BRGM, PLASTELEC S.A. and Camborne School of Mines (all international organizations). A scheme for joint development with the US Department of Energy (DOE) continental drilling program had been proposed. Under this scheme, DOE would fund a slimline, high-temperature downhole water sampler; ODP would advise on construction and develop uphole deck and laboratory equipment. An *ad hoc* geochemistry group, chaired by J. Edmond (MIT), was advising JOI, Inc. on this issue.

The PEC III review had been completed and would be discussed later in the meeting. A draft report of the NAS review of the LRP had also been completed.

Pyle noted that a review of international purchasing and personnel had been conducted, at the request of NSF, and the report submitted to NSF in January, 1991. Policy changes were yet to be discussed with NSF (see Appendix 7 for the draft proposals put forward by JOI, Inc.). JOI, Inc. felt strongly that subcontractors needed names of vendors provided by each member country, so that it was not necessary to go through EXCOM every time. For items costing >\$25,000, JOI, Inc. suggested that the subcontractor should allow 45 days following notification of member country representatives for vendors to submit a proposal. If a product was required in <30 days, no RFP would be disseminated to the international partners. A similar policy was recommended for international personnel hiring (Appendix 7). US Immigration and Naturalization Service regulations would dictate a minimum level of expertise of prospective personnel. Pyle said that he would welcome input. Heinrichs circulated a draft report "ODP Procedures and Policies with Respect to International Purchasing and Employment", which stated past practices, noting that, as Pyle had pointed out, the issue had yet to be discussed by NSF and JOI, Inc. and a plan sorted out.

On the issue of public relations and interactions with other initiatives, Pyle stated that he had published an article on ODP, entitled "Drilling Ocean Ridges" in *RIDGE Events* (November, 1991).

Pyle raised the issue of international representative to the next JOIDES Office. He hoped to have that person attend the April PCOM meeting. Austin added that the person should be from C-A or ESF.

Dürbaum asked whether there were any minutes of the DCS review meeting. Pyle said that he would send out a summary.

ADVISORY STRUCTURE REPORT

Austin noted that his comments were summarized in the Agenda Book (yellow pages 10-12). At its meeting in April, 1991, PCOM had recorded a consensus on the need to limit shipboard scientific party size. At its meeting in December, 1991, PCOM asked ODP-TAMU to look into augmenting technical support, and reducing the scientific party (probably US), by two/leg. The JOIDES Office had reviewed consistency of thematic panel rankings in response to EXCOM's request at its June, 1991, meeting (see tables in Agenda Book, white pages 264-265). Top-ranked proposals tended to remain highly ranked, but lower rankings were more dispersed. The system seemed to work well.

The FY93 drilling program had been defined at the December, 1991, PCOM meeting (Agenda Notes, yellow page 11). *JOIDES Resolution* might be augmented with a jack-up rig for NJ/MAT. NAAG would require an ice-support vessel, at a cost of ~\$1M.

Short-term planning actions concerning FY92 were summarized in the Agenda Book (yellow pages 11-12). Dürbaum, noting that OSN-2 was not to be drilled on Leg 145, felt that FDSN should provide a global priority list of potential OSN holes and not consider each hole separately. Austin responded that that message had been sent to FDSN.

SCIENCE OPERATOR REPORT

A booklet containing the Science Operator report was handed out at the meeting. Rabinowitz reported that, since the last EXCOM meeting, legs 139 (Sedimented Ridges I) and 140 (Hole 504B) had been drilled and Leg 141 (CTJ) had just been completed. Summaries of legs 139 and 140 were included in the handout. High temperatures encountered on Leg 139 had created few problems for drilling and, though preparations had been made to deal with expected H₂S problems, none occurred.

Co-chief scientists had been selected through Leg 146. Rabinowitz said that he had been asked about short-term EXCOM participation in a cruise close to shore. Leg 146 would be within 100 km of shore during parts of the leg. Interested EXCOM members should inform ODP-TAMU as soon as possible, as their participation would impact staffing.

In February, 1992, Initial Reports volumes would be published up to Leg 137 (post-cruise time to publication ~11-13 months). Scientific Results volumes had been completed through Leg 121 (post-cruise time to publication ~36-37 months).

All co-chiefs and all PCOM co-chief nominees were listed in the handout. Only 6-7 co-chiefs were not PCOM nominees, and those were always special circumstances. Referring to recent discussions about a too-literal interpretation of MOUs concerning selection of co-chiefs, Rabinowitz stated that ODP-TAMU had not really done that. The international balance of co-chiefs was averaged over a period greater than one year.

A list of non-US ODP-TAMU employees was included in the handout. All positions were advertised internationally, but few international responses had been received. It was planned to

distribute a brochure on employment opportunities at ODP-TAMU to shipboard scientists. They could then spread the the information at their home institutions.

WIRELINER OPERATOR REPORT

Anderson reported that ODP-LDGO was inundated with data. The amount of logging data being distributed was increasing. That distribution could be done electronically via Internet. ODP-LDGO has a geographically-oriented database (GeoBase) which would enable users to select and transport data. Anderson felt that the structure of the Wireline Logging group could be changed, e.g., at present, insufficient funds were going to management of third-party tools, but they could be managed in a decentralized, international way over Internet. Anderson hoped to place nodes in several countries to take advantage of local expertise; he wanted funds from BCOM to implement that plan.

Discussion

Rosendahl asked why not make all shipboard data, not just logging data, accessible by computer. Anderson replied that it was good to begin with logging data, because Schlumberger was doing that now. In addition, MAXIS would be coming in the future. He added that the data could also be encrypted. Erzinger asked whether raw or processed data (e.g., including heave compensation) would be distributed on the computer network. Anderson answered that ODP-LDGO proposed downlinking to processing labs. Data could include a label stating that they were not processed. Boillot, noting that Anderson's ODP-LDGO proposal would be evaluated by PCOM, asked whether EXCOM would discuss it in June. He felt that would be useful. Maxwell responded that EXCOM could ask PCOM to try to report back. Austin said that PCOM would look at the science plan (thematic panels would report to PCOM on it). He added that PCOM would get EXCOM something for its June meeting.

525. New Business

PERFORMANCE EVALUATION COMMITTEE III REPORT

The PEC III report was included in the Agenda Book (white pages 205-258). J. Maxwell, chair of PEC III, began by noting that ODP was in charge of exploring ~75% of the earth's crust and needed to get that across to the public and fellow scientists. PEC III had concluded that some changes were needed, but that the process should be a metamorphosis, rather than a revolution.

PEC III's charge had been to evaluate management of ODP and performance of subcontractors. PEC III studied every aspect of operations, through visits and attendance at meetings.

PEC III felt that ODP-TAMU was a good operation. However, staff scientists and technicians were overburdened and budget limitations on the engineering group inhibited timely development.

JOIDES Resolution was impressive and well-maintained. SEDCO personnel were rated highly by ODP and shipboard scientists. Accommodation was cramped and dining facilities were inadequate. Size of the scientific party should be reduced.

ODP-LDGO was also a good operation and very busy. It was hoped that changes described by Anderson could be implemented.

The lengths of legs seemed to be tiring. Complaints had been fewer during DSDP. Morale among the technicians was poor.

PEC III looked at the success of legs as a measure of ODP's achievement of its planned goals. Success was measured relative to COSOD and pre-cruise objectives. Results were summarized in the PEC III report (Agenda Book, white pages 221-223) and presented in more detail as an appendix to the PEC III report (Agenda Book, white pages 233-253). Serendipity has played a role in cases when original objectives could not be achieved.

PCOM had made good-faith efforts to promote participation in ODP research. These efforts had been successful in that a large number of proposals had been submitted. However, PEC III felt that the seismic data required for successful proposals presented a problem for many proponents. The concept of letters of intent was a good first step to alleviating that problem, but the scientific community was not sufficiently aware of that option.

J. Maxwell summarized PEC III's recommendations (Agenda Book, white page 229) as follows.

- Delay in publishing some important science caused by having to wait for Scientific Results volumes was unacceptable. PEC III suggested early publication in peer-reviewed, outside journals.
- A professional science writer should be employed to publicize ODP.
- Steps should be taken to alleviate overcrowding on *JOIDES Resolution*.
- A panel should be appointed to review the JOIDES planning and advisory structure.
- ODP should be more focused. Thematic panels should direct proposals, not simply react to them.
- ODP-TAMU should address the problem of low technician morale.
- A mechanism for funding site surveys should be established so that availability of such surveys was not the determining factor for acceptance of proposals.
- Funds provided to JOI, Inc. for contingencies should be continued.

Discussion

A. Maxwell explained that subcontractors were usually asked to respond to PEC reports, but that there had not yet been time for such responses. He hoped to have subcontractor responses at the next EXCOM meeting. Baker stated that subcontractors could give oral reports. Rabinowitz responded that ODP-TAMU had addressed the issue of technician stress by changing management. He hoped that would correct the problem. Anderson stated that the step into Internet was an attempt to alleviate the data overload problem at ODP-LDGO highlighted by PEC III.

Maxwell noted that the PEC III and Briden reports were complementary. Baker said that EXCOM and PCOM should consider the issue of a review of the planning and advisory structure. Austin felt that PCOM could not ask for a review of itself. PCOM was presently doing almost all that PEC III had suggested and was, therefore, satisfied. More would require EXCOM action. Briden pointed out that his recommendations (x), (xi) and (xii) on the advisory structure recommended such a review. It might be too urgent to leave to the next EXCOM meeting. The review could be set up based on PEC III's and Briden's own recommendations to report in a year. Heinrichs stated that France had also proposed a scientific committee to examine the advisory structure. Maxwell responded that he was concerned that EXCOM proceed properly, and that required thought. Dürbaum proposed that a review be set up by fax during the two weeks following EXCOM and not be deferred for six months. Dorman suggested asking PEC III to take this further step. However, J. Maxwell felt it should be done by present or past EXCOM members. Helsley said that the terms of reference of any review committee would have to be sent to EXCOM members by fax. Maxwell suggested that

EXCOM leave it to Baker and himself to define the terms of reference. They would then contact EXCOM members within two weeks. The review committee could review the advisory structure and, if changes were needed, make recommendations.

Maxwell thanked PEC III, which he felt had produced the best PEC report to date. J. Maxwell responded that he would pass that on to the rest of PEC III.

Baker noted that PECs were ~3 years apart. The next would be appointed in late FY93 and do its work in FY94. PEC was a NSF contractual requirement with JOI, Inc. Maxwell suggested that EXCOM might wish to discuss that. Heinrichs stated that NSF had no objections. Briden felt that having PECs report to EXCOM might be preferable to having them report to JOI, Inc. That could be an MOU issue and, therefore, urgent.

526. Report of EXCOM *ad hoc* Subcommittees

Before hearing the reports of the EXCOM *ad hoc* subcommittees, EXCOM reached the following consensus.

EXCOM Consensus

EXCOM noted with great interest the ongoing planning for new ocean drilling facilities as presented by Japan, Russia and the NEREIS project. EXCOM welcomed these as potentially important contributions to ocean drilling and associated science and enhanced international cooperation, and encouraged further development of the plans in close cooperation with JOIDES planning. In particular, EXCOM welcomed the recent Japanese national policy which is expected to lead to increased contributions to the international science community.

An EXCOM *ad hoc* subcommittee, comprising Dorman, Dürbaum and Falvey, had met overnight to discuss recommendations (vi), (vii), (viii), (ix), (xiii) and (xv) of the Briden report, related to subcontract issues and incorporation of new vessels. Dorman reported results of the deliberations (a summary was also handed out at the meeting). The subcommittee would 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 and when, and how bids would be evaluated. A caveat would be that NSF intended the sole-source prime contract to remain with JOI, Inc. for 1993-1998.

Dorman described the plan of action and timing. A clear statement of current contractual responsibilities (statements of work) would be provided by JOI, Inc. by 24 January 1992. Requests for statements of interest (with statements of work) would be sent to all EXCOM members by 30 January 1992. The baseline program for FY93-98 was defined as FY93-FY98 with *JOIDES Resolution* as primary drillship, and current statements of work for drillship, science and science support, and wireline logging operations. The 4 areas of interest to be considered were as follows.

- A) In the baseline program, which work elements would members bid on if offered? (Members should describe their capabilities and rationale.)
- B) In the baseline program, what supplementary projects would members like to bid on, if offered for competition (beyond current OPCOM plans)? Members should describe projects, timing, rationale, cost estimate, funding alternatives.

- C) If baseline program was completed, what would members like to offer for the post-1998 timeframe.
- D) As alternate to the baseline program, how would members restructure contracts and operations for FY93-FY98? (Members should describe their offering, timing, ship, service, etc.; cost impact; rationale.)

Responses to request for statements of interest were requested by February 25, 1992 (responses did not have to be very formal). The *ad hoc* subcommittee would meet on February 27 to March 3, 1992, to visit ODP-TAMU, ODP-LDGO and JOI, Inc. (possibly other US institutions) and review responses. The subcommittee would collect supplementary information and arrange visits to offerers by 30 March, 1992. Visits to offerers would take place between 11-26 April, 1992. The *ad hoc* subcommittee would meet to draft a "strawman" on 4-8 May, 1992. The strawman would be reviewed by JOI, Inc. for legal /regulatory suitability by 22 May, 1992. The final report would be disseminated by 5 June, 1992, with presentation at the next EXCOM meeting on June 15, 1992. Dorman asked that EXCOM support travel of the subcommittee. Maxwell agreed. Dorman also asked for recognition that countries and institutions represented by the subcommittee members would not be excluded from participating in bidding.

Baker said that EXCOM would have to agree to some procedure, e.g., that information on who was interested in bidding, and on what, became public in June, 1992, but would be kept confidential until then. Maxwell suggested making the information available to all EXCOM members. Dorman agreed that it would be available, but that the subcommittee did not wish to disseminate it. Maxwell said that a summary would be sufficient. Falvey noted that, under those terms, there would be no confidential submissions.

A second *ad hoc* subcommittee, comprising Leinen, Merrell and Bogdanov, had met overnight to discuss recommendations (i) and (ii) of the Briden report. Leinen reported that the subcommittee had reworded recommendation (i) to read as follows.

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

The subcommittee could not improve on the original wording of recommendation (ii). EXCOM concurred with the rewording of recommendation (i).

527. Future Meetings

The June, 1992 EXCOM/ODPC meeting will be held on 15-18 June, 1992, in the Washington, D.C., area. The report of the Dorman and others *ad hoc* subcommittee will be discussed on 15 June. ODPC/EXCOM will meet on 16-17 June. Possible spillover and JOI-BOG will meet on 18 June.

The next international EXCOM will be hosted by Falvey in Australia. The meeting was provisionally scheduled for the week of 18 January, 1993, with dates to be announced. Possible venues were Cairns, Brisbane or Sydney.

ADJOURNMENT

Maxwell thanked the host, Maronde, and DFG.

The meeting was adjourned at 12:30 PM.

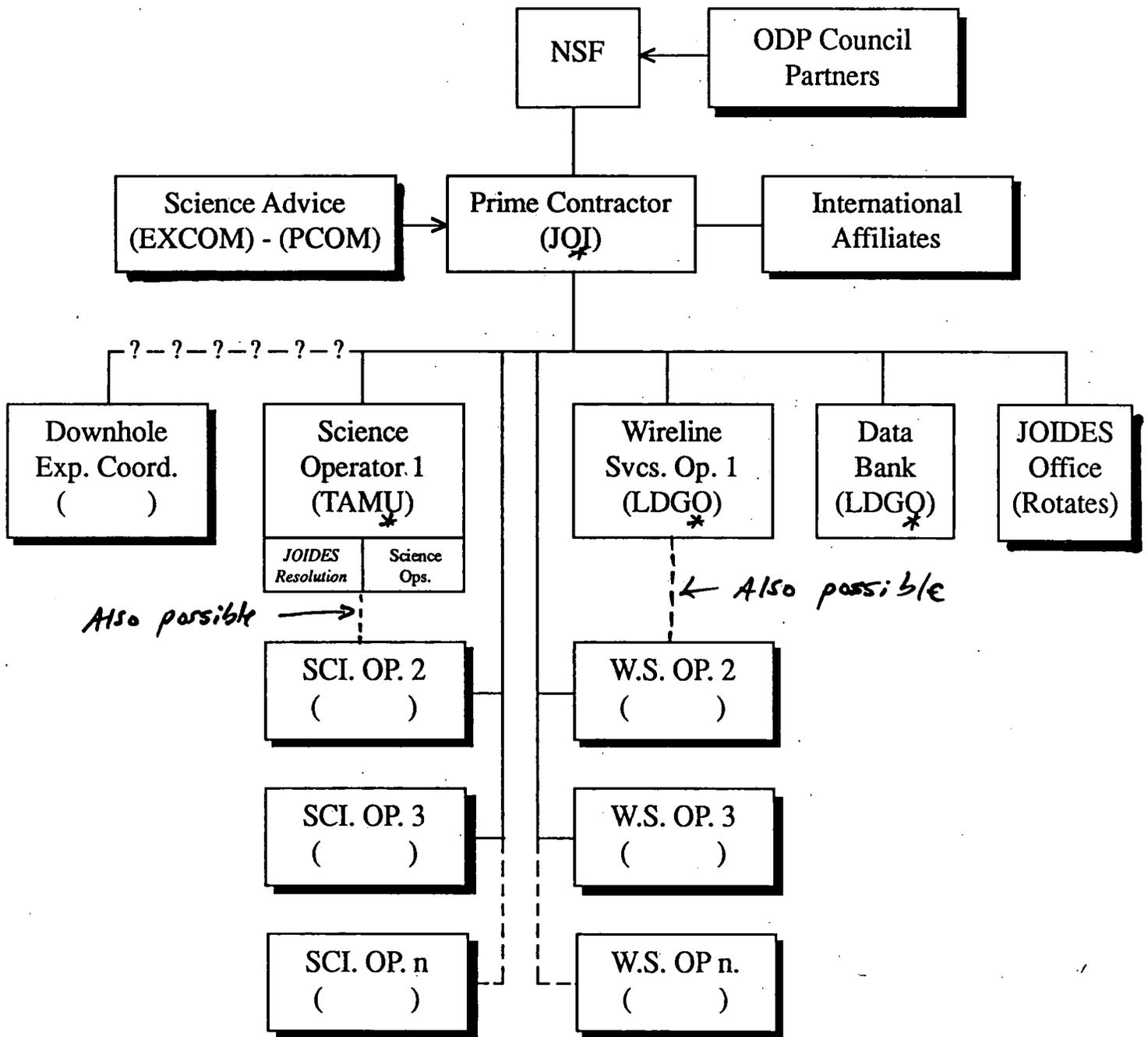
APPENDICES ATTACHED TO THE 9-10 JULY 1991 EXCOM MINUTES

1. Tiers of contracting
2. Briden report recommendations
3. Report on NEREIS
4. France - position paper
5. US membership report, supplemental information
6. FY92 and FY93 budget and projects, supplemental information
7. Program management report, supplemental information

HANDOUTS DISTRIBUTED AT THE 9-10 JULY EXCOM MEETING

1. Letter from N. Bogdanov to A. Maxwell, re: Russian participation and drillship
2. New Deep Sea Drilling Program in Japan
3. JOI/USSAC report
4. ODP Procedures and Policies with Respect to International Purchasing and Employment (as submitted from JOI, Inc. to NSF on December 15, 1991)
5. Science Operator Report
6. Preliminary report of *ad hoc* subcommittee (Dorman, Dürbaum, Falvey), supplemental information

TIERS of CONTRACTING



International or Potential International

* Current Contractors

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 JGOFPS. 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

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 competition 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 geoscientists (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

NEREIS

. A European ship for light drilling and on-station experiments.

. Recommendations (abstracts) of the CEC/ESF Brussels workshop (29-30 January 1990) :

. for better understanding of different aspects of the deep-ocean global environment ;

. a vessel capable of highly precise detailed surveys, of handling complex ocean floor benthic laboratories and of drilling shallow holes in sediment and in rock.

A high tech facility

Components **integrated** into systems **integrated** into a single ship.

• **Sampling**

• **Down hole instrumentation**

• **Sea floor and other experiments**

• **Observation**

Penetration of the sea floor is required by all of the themes. Some penetration could be achieved by cable-deployed bottom drills or piston corers, but substantial and important targets need drilling deeper than is at present possible by these means. The ship should thus be a drillship, handling up to 6 000 m of drill pipe and capable of hydraulic piston coring to 300 m in soft sediments and rotary drilling to 50 m in hard rock. This would again require dynamic positioning and heave compensation.

The NEREIS Project

- . A general European agreement on the idea and on the concept.
- . A new ship would cost about \$ 100 M.
- . Most of potential partners are not able to identify financial participations in the short-term.
- . An eventual other possibility is under investigation : conversion of an existing ship.

A possible scenario

Two drilling ships :

* "JOIDES RESOLUTION"

* NEREIS

Two scientific objectives :

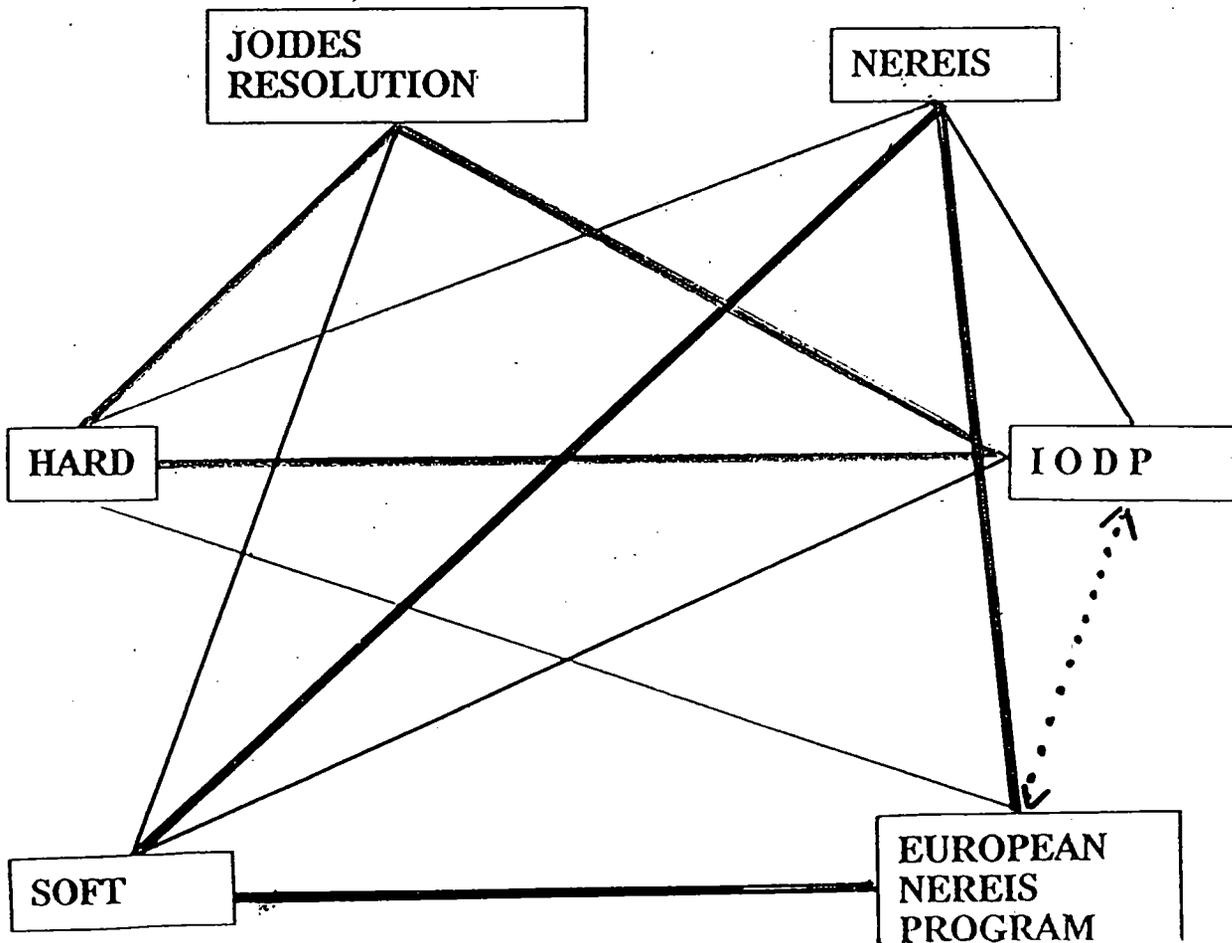
* HARD

* SOFT

Two programs :

* I O D P

* European NEREIS program



ODP Excom – BONN (*Germany*) – 14–15 January 1992

France – Position paper

1. France warmly congratulates Jim BRIDEN for his excellent report to Excom and is sincerely grateful to him for the very good job he has performed within a very short notice. The French "*Comité Directeur*" for ODP particularly welcomes the precise analysis of the present status and of the future conditions of scientific ocean drilling as well as Jim BRIDEN's will to reach a consensus for the benefit of all.
2. France strongly supports the action which has been undertaken for the renewal of ODP. The French position has been stated at several times and should be recalled here : *A worldwide international program for ocean drilling is essential for the improvement of earth and ocean sciences. But ODP has to be rebuilt from now on for a better fitting with the evolution of science and technology. Most of Jim BRIDEN's report recommendations concur with this double idea.*

3. We however take notice of some points on which important differences remain between the report and the French position. We would like to have a further discussion on the following points :

- (i) France would like to split the PCOM in two separate committees : one **Scientific Committee** (as a "*permanent COSOD*") for the long-term issues and strategy and one **Planning Committee** for the short and mid-term planification ;
- (ii) France remains in favor of separate but coordinated international drilling programs, at least two : *one for the evolution of the surface of the Earth and the environment, and one for the evolution of the inner Earth* ;
- (iii) J. BRIDEN's report gives 1998 for the beginning of NEOD. France proposes that this new era would start from 1996 which seems concordant with the peer review as proposed by NSF, the possible arriving of new facilities and, as far as France is concerned, with the recommendations of its recent national peer review. Actually the definitive starting year for NEOD depends on some new events such as the first additional facilities arrival and **should not be later than 1998.**

4. France strongly supports the immediate implementation of a number of Jim BRIDEN's report recommendations :
 - (i) to establish a regular open scientific conference to promote ocean drilling within the advancement of Earth sciences and to publish its contributions in a wide open scientific litterature together with the "*ODP proceedings*";
 - (ii) to improve a full internationalized contracting organization for the program scientific operations ;
 - (iii) to call for international tenders by NSF for all contracts linked with the international ocean drilling program.

5. France also supports the proposed procedures for the incorporation of new facilities in the program using a contracting way and in particular the clear distinction between rights and duties of host-partners and of ordinary-partners.

6. France stands for a MOU which should not be the simple recondution of the present one. It should take into account the multilateral agreement to be agreed by partners of ODP on the basis of Jim BRIDEN's report.

We recall here that we have proposed a unique general MOU to be set up between all partners as a clear demonstration of their will to cooperate in ocean drilling for the mid-term. This MOU should be complemented by specific bilateral agreements between NSF and each of its partners.

OCEAN SCIENCES DIVISION

	<u>Actual FY 1990</u>	<u>Actual FY 1991</u>	<u>Estimated FY 1992</u>
Ocean Sciences Division	\$147.4 M	\$164.8 M	\$178.8 M
Ocean Sciences Research	72.9 M	82.1 M	90.8 M
Ocean Drilling Program	32.0 M	35.0 M	36.4 M
Oceanographic Facilities	42.5 M	47.7 M	51.6 M

OCEANOGRAPHIC FACILITIES DETAIL

Operations			
Ship Operations	\$ 22.4 M*	\$ 26.7 M*	\$ 30.2 M*
ALVIN, Aircraft, etc.	1.4 M	1.8 M	1.3 M
Marine Techs	<u>3.7 M</u>	<u>4.0 M</u>	<u>4.3 M</u>
	27.5 M	32.5 M	35.8 M
Infrastructure			
Science Instruments	\$ 1.8 M	\$ 1.9 M	\$ 4.0 M
Shipboard Equipment	2.1 M	2.2 M	
Ships, Upgrades	3.4 M	3.7 M	3.3 M
UNOLS, Misc.	<u>0.6 M</u>	<u>0.6 M</u>	<u>0.7 M</u>
	7.9 M	8.4 M	8.0 M
Technology, Centers, Reserves			
Technology Development	3.5 M	4.2 M	4.5 M
AMS Center	1.8 M	1.7 M	1.5 M
Cross Directorate/Reserves	<u>1.8 M</u>	<u>0.9 M</u>	<u>1.8 M</u>
	7.1 M	6.8 M	7.8 M

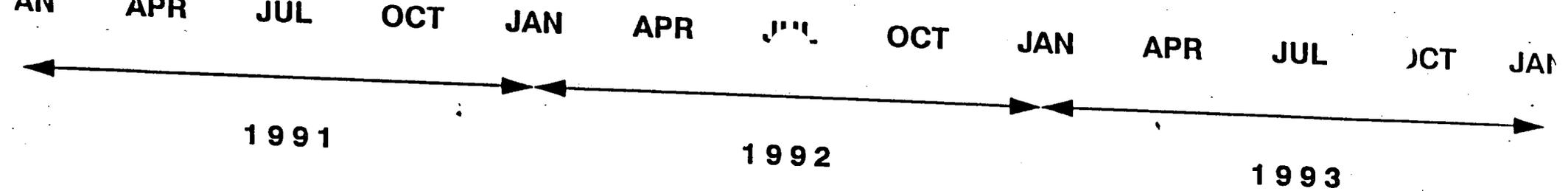
* Plus \$1.0 M from ODP (1990), \$1.6 M (1991), \$1.6 M (1992)

1992 NATIONAL SCIENCE FOUNDATION BUDGET

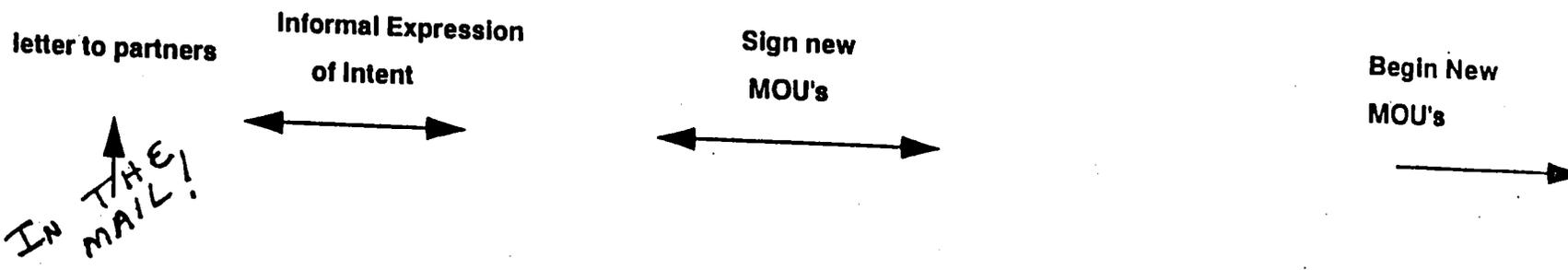
	<u>1991</u>	<u>1992 REQUEST</u>	<u>1992 FINAL</u>	
RESEARCH	\$1694	\$1963	\$1874	+10 %
EDUCATION	322	390	\$ 465	+44 %
INSTR. /FACIL	20	50	\$ 33	+65 %
ANTARCTIC PROG	175	193	\$ 88	-55 %
SALARIES/OPERATIONS	<u>105</u>	<u>126</u>	<u>\$ 112</u>	<u>+ 8 %</u>
TOTAL	\$2316	\$2722	\$2572	+11.2%

1992 REQUESTED BUDGET

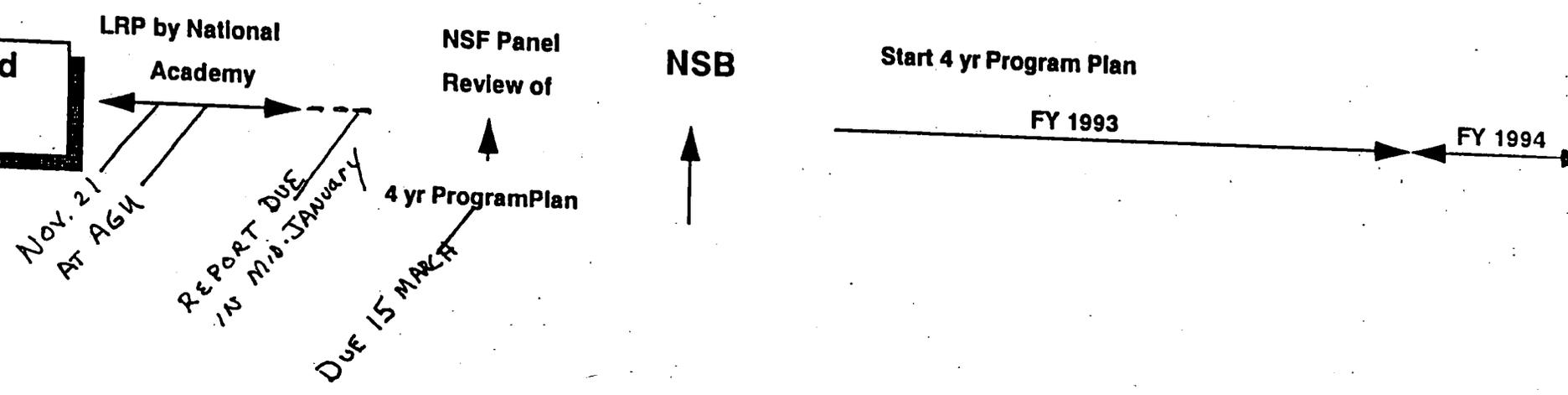
	1990 INCREASE	1991 INCREASE	1992 INCREASE
FOUNDATION TOTAL	8.3%	11.1%	11.2%
BIOLOGICAL/BEHAVIORAL	4.3%	7.5%	7.9%
COMPUTER/INFORMATION	11.9%	10.1%	14.4%
ENGINEERING	7.0%	7.5%	9.2%
MATHEMATICS/PHYSICAL	10.7%	7.1%	12.1%
EDUCATION	19.3%	46.4%	44.4%
ANTARCTIC PROGRAM (NSF & DOD Funds)	15.9%	15.2%	18.0%
GEOSCIENCES	5.2%	12.9%	10.0%
ATMOSPHERIC	6.1%	10.1%	9.2%
EARTH SCIENCES	11.1%	13.6%	7.3%
ARCTIC SCIENCES	22.0%	20.0%	42.3%
<u>OCEAN SCIENCES</u>	1.0%	11.8%	8.5%
Research Projects	2.8%	12.5%	10.6%
Centers/Facil	- 3.0%	11.8%	8.1%
<u>Ocean Drilling</u>	0.1%	9.3%	4.0%



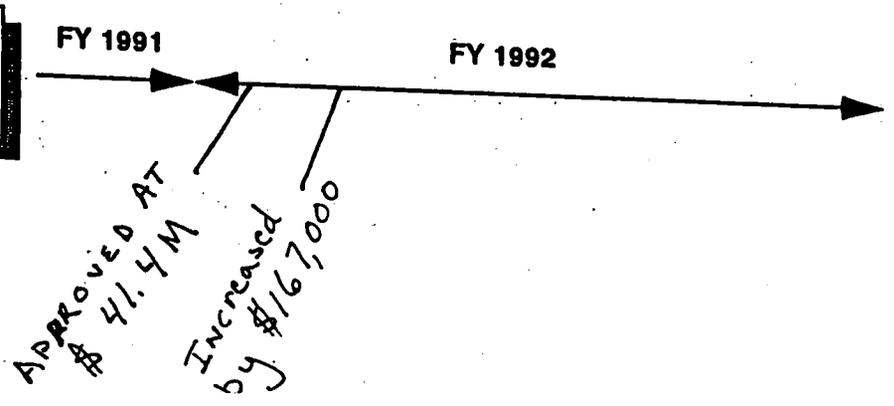
International Activities



Reviews and Funding



Funding (Existing Approval)



5.4

OCEAN DRILLING PROGRAM

	<u>Actual FY 1991</u>	<u>Estimated FY1992</u>	<u>Projection FY 1993</u>	<u>Projection FY 1994</u>
Operations/Management				
NSF funds	23.5	22.2	23.9	24.6
Int. funds	16.5	19.3	19.3	20.8
	40.0	41.5	43.2	45.4
LRP Supplement				
	-----	2.1	2.1	2.9
	40.0 M	43.6 M	45.3 M	48.3 M

NOTES:

- * FY 1991 includes fuel supplement of \$ 0.4 M by NSF.
- * FY 1992 - 1994 projections based on 7 international partners and 7% increase in international support level in 1994
- * JOIDES Long Range Plan estimates used for projections

OCEAN DRILLING PROGRAM

Base Plan Option (No USSR)

6.2

	<u>Actual FY 1991</u>	<u>Estimated FY 1992</u>	<u>Projection FY 1993</u>	<u>Projection FY 1994</u>
Operations/Management				
NSF funds	23.5	25.0 22.2 →	26.7 23.9 →	27.7 24.6 →
Int. funds	16.5	16.5 19.3 →	16.5 19.3 →	17.7 20.8 →
	40.0	41.5	43.2	45.4
LRP Supplement				
	-----	2.1 → °	2.1 → °	2.9 → °
	40.0 M	43.6 M 41.5	45.3 M 43.2	48.3 M 45.4

NOTES:

- * FY 1991 includes fuel supplement of \$ 0.4 M by NSF.
- * FY 1992 - 1994 projections based on ⁶/₇ international partners and 7% increase in international support level in 1994. USSR funds (\$1.4M) held as reserve.
- * JOIDES Long Range Plan estimates used for projections

<u>Balance</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>
U.S.	58.8%	60.2%	61.8%	61.0%
Int.	41.2%	39.8%	38.2%	39.0%

OCEAN DRILLING PROGRAM

LRP Plan Option (No USSR)

	<u>Actual FY 1991</u>	<u>Estimated FY 1992</u>	<u>Projection FY 1993</u>	<u>Projection FY 1994</u>	
Operations/Management					(10%)
NSF funds	23.5	23.6 22.2 ⁷	26.7 23.9 ⁷	27.7 24.6 ⁷	27.2
Int. funds	16.5	17.9 19.3 ⁷	16.5 19.3 ⁷	17.7 20.8 ⁷	18.2
	40.0	41.5	43.2	45.4	45.4
LRP Supplement	-----	0.7 2.1 ⁷	2.1	2.9	2.9
	40.0 M	43.6 M 42.2	45.3 M	48.3 M	48.3 M

NOTES:

- * FY 1991 includes fuel supplement of \$ 0.4 M by NSF.
- * FY 1992 - 1994 projections based on ⁶/₇ international partners and 7% increase in international support level in 1994. USSR funds spent in 1992. (10%)^{*}
- * JOIDES Long Range Plan estimates used for projections

Balance

	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	
U.S.	58.8%	57.6%	63.6%	63.4%	62.3%
Int.	41.2%	42.4%	36.4%	36.6%	37.7%

63

OCEAN DRILLING PROGRAM

LRP Plan Option (No USSR)

6.4

	<u>Actual FY 1991</u>	<u>Estimated FY1992</u>	<u>Projection FY 1993</u>	<u>Projection FY 1994</u>	
Operations/Management					(10%)
NSF funds	23.5	23.6 22.2	26.7 23.9	27.7 24.6	27.2
Int. funds	16.5	17.9 19.3	16.5 19.3	17.7 20.8	18.2
	<hr/> 40.0	<hr/> 41.5	<hr/> 43.2	<hr/> 45.4	<hr/> 45.4
LRP Supplement	-----	0.7 2.1	2.1	2.9	2.9
	<hr/> 40.0 M	<hr/> 43.6 M 42.2	<hr/> 45.3 M	<hr/> 48.3 M	<hr/> 48.3 M

NOTES:

- * FY 1991 includes fuel supplement of \$
- * FY 1992 - 1994 projections based on international support level in 1994.
- * JOIDES Long Range Plan estimates used for projections

PROBLEM!
 U.S. 1992 → 93
 \$4.5 M increase
 (10%)*
 and 7% increase in 1992.

<u>Balance</u>	<u>1991</u>	<u>1992</u>	<u>1993</u>	<u>1994</u>	
U.S.	58.8%	57.6%	63.6%	63.49	62.3
+	11.2	11.2	26.49	26.62	37.72

DRAFT

CALENDAR FOR FY93 - 96
PROGRAM PLAN DEVELOPMENT

Present NSF budget target known to JOI (LRP numbers)

Jan. 2 FY93 part of Science Plan from JOIDES Office to JOI and subcontractors

Jan. ____ FY94 - 96 part of Science Plan from JOIDES Office to JOI and subcontractors

Jan. 7 FY93 - 96 "Budget Outline" from subcontractors to JOI

Jan. 8 "Budget Outline" faxed by JOI to BCOM members

Jan. 16 (p.m.) - 17 BCOM meeting in Bonn (after EXCOM & JOI BOG)

Jan. 27 Drafts of Program Plan due at JOI from subcontractors

Feb. 10 Draft of Program Plan due at NSF for Administrative Review

Feb. 14 Response from NSF to JOI

 Mar. 16 Final Draft of Program Plan to NSF

April - May NSF Panel Review of Program Plan

June 1 Final Draft of Program Plan express mailed to EXCOM

June 16 - 18 EXCOM considers Program Plan

July - Aug. National Science Board Review of Program Plan

ODP Purchasing/Contracting and Employment

- Report submitted to NSF in December 1991
- Subcontractors need established vendor list provided by partner country representatives
- Need clearly stated policy for purchasing and personnel hiring

International Purchasing Policy

ODP Subcontractors, in the performance of the work set forth in their subcontract, shall allow participating country businesses to compete for subcontracts exceeding \$25,000. The Subcontractor will allow 45 calendar days following notification to partner country representatives for vendors to submit a proposal. In the event where the product is required within 30 days, the RFP/RFQ will not be disseminated among the partner countries.

International Personnel Hiring Policy

ODP Subcontractors shall notify partner country representatives of all non-administrative employment opportunities in the Ocean Drilling Program. The Subcontractor will allow 45 calendar days following notification to the representatives for individuals to apply for the position. In the event where a position must be filled within 30 days (e.g., shipboard personnel needed just prior to a leg), the position will not be announced to the partner countries.