

JOINT MEETING OF THE JOIDES EXECUTIVE COMMITTEE AND
OCEAN DRILLING PROGRAM COUNCIL
June 20-21, 1990
Ramada Renaissance Hotel, Washington, D.C.

MINUTES

Executive Committee (EXCOM):

C. Helsley, Chairman - Hawaii Institute of Geophysics
T. Asai - ORI (Japan)
G. Boillot - Université Pierre et Marie Curie (France)
J. Briden - NERC (United Kingdom)
D. Caldwell - Oregon State University
C. Dorman - Woods Hole Oceanographic Institution
H. Dürbaum - BGR (Federal Republic of Germany)
D. Kent - Lamont-Doherty Geological Observatory
W. Merrell, Jr. - Texas A&M University
M. Moss (for E. Frieman) - Scripps Institution of Oceanography
A. Nowell (for G. Heath) - University of Washington
B. Rosendahl - University of Miami
R. Riddihough - Geological Survey of Canada (Canada-Australia Consortium)
J-G. Schilling (for R. Duce) - University of Rhode Island
P. Stoffa (for A. Maxwell) University of Texas Institute for Geophysics
L. Westgaard - Royal Norwegian Embassy (ESF Consortium for Ocean Drilling)

ODP Council Members (not included on JOIDES EXCOM):

M. Fratta - European Science Foundation (France)
D. Heinrichs (National Science Foundation)
D. Maronde - Deutsche Forschungsgemeinschaft (Federal Republic of Germany)
J. Michot - Univ. Libre de Bruxelles (Belgium)

Liaisons:

R. Anderson (Wireline Logging Services)
D. J. Baker (Joint Oceanographic Institutions)
R. Moberly (Planning Committee)
P. Rabinowitz (Science Operator)

Guests and Observers:

J. Austin - University of Texas at Austin
B. Biju-Duval - IFREMER (France)
G. Gross - National Science Foundation
E. Kappel - Joint Oceanographic Institutions, Inc.
K. Kobayashi - ORI (Japan)
J. Ladd - National Science Foundation
M. Leinen - University of Rhode Island
B. Malfait - National Science Foundation
P. Peters - Joint Oceanographic Institutions, Inc.
T. Pyle - Joint Oceanographic Institutions, Inc.

JOIDES Office:

P. Cooper - Science Coordinator
L. d'Ozouville - Executive Assistant and Non-US Liaison

**Joint Session of ODPC and JOIDES EXCOM
Wednesday, 20 June 1990**

484 INITIAL BUSINESS

The meeting was brought to order at 9:10 AM as C. Helsley bid everyone good morning and welcomed EXCOM members to the joint meeting of the JOIDES Executive Committee (EXCOM) and Ocean Drilling Program Council (ODPC); he explained that this session will be jointly chaired by himself and D. Heinrichs, NSF. Welcoming remarks by D. Heinrichs, including an explanation of the meeting schedule for JOI Board of Governors and ODPC, were followed by introductions around the table. Following adjournment of the joint session sometime on June 21 afternoon, the EXCOM will meet separately to make programmatic decisions; the Council and JOI Board of Governors will meet separately the morning of June 22.

J. Baker welcomed everyone on behalf of JOI and explained the logistics of the meetings and events; he thanked Penny Peters (JOI) for making arrangements for the dinner and reception hosted by JOI Board of Governors.

ADOPTION OF AGENDA

C. Helsley explained the agenda book format to new EXCOM and ODPC members and reminded EXCOM members to keep track of all action items.

EXCOM Motion

EXCOM adopts the agenda for the 20-21 October 1990 joint Executive Committee and ODP Council meeting. (Motion C. Dorman, second M. Moss)

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

485 FUTURE OF THE OCEAN DRILLING PROGRAM

PERSPECTIVE FOR A POST-1993 PROGRAM

J. Baker (JOI) offered a brief summary of the ODP National Science Board (NSB) presentation from March, 1990: ODP - what it is, where it is and where it's going. Similar presentations will be made in the future. Baker introduced the topics and 4 speakers to NSB: Ruddiman (paleoclimate); Fryer (tectonics); Worthington (technology of logging), and Pisiias (Long Range Plan). The presentation was well received.

Baker's introduction noted that ocean drilling had been suggested as early as 1888 by Charles Darwin, while the first proposal to drill around the deep oceans was by Jagger in the 1940's. In 1957 the theme was picked up to drill to Moho, and finally expanded through DSDP to the ocean drilling program in operation today. The introduction summarized major discoveries of ocean drilling including the youthfulness of ocean floors; direct evidence for seafloor spreading; modern surprises include unexpectedly high crustal temperature measurements and sampling of oldest (Jurassic) crust.

The breadth of the program was illustrated by an introduction to ODP organizational, advisory and financial support; a description of the drill ship and modes of operations; membership; actual accomplishments (number of holes and statistics; samples distributed, etc); reporting of scientific results (publications); emphasis that the larger *JOIDES*

Resolution has allowed greater student participation, i.e. training of future program participants. The program has an important emphasis on education.

Also included: The future of ODP as determined by COSOD meetings where a variety of objectives are laid out; the importance of membership participation (one point made to the board was the importance of including the U.S.S.R. as a partner); interaction with global programs such as RIDGE (Ridge Interdisciplinary Global Experiments); and new platform development and its effects on future program planning were discussed. A summary of the Long Range Plan (LRP) finished the NSB presentation. The duration of the formal presentation was about 2 hours, followed by a question and answer period.

Discussion

In response to questioning by Biju-Duval, Baker explained that 24 persons sit on NSB; about 2/3 of those were present, plus several upper level administrators; 24 persons attended the presentation. Heinrichs emphasized that the presentation was meant to update and inform, stating that ODP would be returning in about a year requesting extension of the program. The program has run very well, so ODP hasn't been before the board recently.

FRAMEWORK FOR RENEWAL

Timelines

The current timeframe for ODP renewal actions is same as that presented at the October 3-4 1989 EXCOM meeting. D. Heinrichs stated that EXCOM must discuss the post-1993 program; we are in a transition phase on programs from governmental and science planning functions, working on what is currently planned and taking the necessary lead time for long-term actions. D. Heinrichs summarized progress toward renewal: the NSB presentation has been made; we have informed the science boards that we do expect to come back to them formally in late 1991 (or early 1992) with a request for an extension of the program, keyed on agreements with international partners on the scope, scale and content of the program. The commitment at the research directorate level is that NSF does view that the program should continue. We will need to have an external review, but ODP has strong support from Bob Corell.

Discussion:

H. Dürbaum wished to know what is the role of US Academy of Sciences in the program (he had read a very critical letter from R. Coleman). Heinrichs responded that when we have a specific plan that puts in context the support organization and goals of the next phase of drilling, the NSF will convene a broadly based panel of geoscientists to look at where drilling fits into geosciences. NSF also will solicit comments from our Academy of Sciences, which will involve two geoscience committees - the Ocean Studies Board and the Board on Earth Sciences and Resources. Coleman is a member of the Board on Earth Sciences and Resources and is working on an independent study of the geosciences supported by the Keck Foundation and his comments are, in Heinrich's opinion, personal and not the opinion of the Academy of Sciences. Baker added that the Academy of Sciences will be involved in a review of the Ocean Drilling Program.

C. Helsley and D. Heinrichs then requested a brief update from member countries on the status of planning from members and their concerns regarding renewal.

J. Briden stated that the UK financial year is out of step with the US fiscal year, and this tends to stretch out the process. In order to get new money in place for Oct. 1, 1993 the

money must actually be in place by April 1 of that year. This requires a commitment from NERC by about Nov. 1991. If no significant new money is indicated, *i.e.* a continuation with something like the present financial implications, then NERC could make its commitment at that time. Briden anticipated that NERC would not agree to substantial increase in funding from the funds it already has, and would have to bid for new money to supplement it. In that case it would not know the answer until November 1992.

D. Maronde mentioned that at the last meeting in Amsterdam, he had discussed the preparation of a German brochure based on the LRP with respect to German participation in the last years and giving an outlook for future participation. Response in the German marine science community was very positive, including intensive discussion of ODP at a symposium in Bremen earlier this year. This brochure will be printed soon. Timing depends on the new situation in FRG. Maronde asked Heinrichs when ODP will start discussions with partners; there is no problem if conditions do not change. Heinrichs replied that informal discussions will continue into 1991, when there will be formal letters. He applauded that the FRG seems to have a stronger commitment to continue the program than the US does! The very positive informal comments from BMFT suggest that the US may be a little too slow for FRG.

L. Westgaard reported that a meeting of the Management Committee (EMCO) of the ESF Consortium took place about a week ago to establish a time table. As soon as the LRP is distributed and the results of this meeting are known, whatever is needed will take place in the countries according to their individual requirements and procedures that differ quite a lot. There will first be a statement of scientific issues and wishes of the scientists in the ESCO early next year. That should be positive, barring too many changes in orientation. After this, the management committee will meet again in spring or summer 1991 and from then on there will be a formal contact to the twelve members. If all comes out positive, in the first half of 1992 a formal MOU will be prepared. In this time scale, if all comes out right, we will be ready. There are some worries regarding the time scale, since budgets for some countries have deadlines in Jan 1. R. Anderson wished to know if any Eastern European countries would join ESF? M. Fratta answered, stating that some contacts have been made already. One or two countries may ask formally to become members of ESF, but nothing has been decided.

B. Biju-Duval reported that after the Oct. 1989 EXCOM meeting, there were several meetings in France regarding the future of the program; because of NEREIS, France has some scientific and political debate regarding future participation in ODP and the French ODP Executive Board discussed the matter last April. It is clear that we are just in time for looking to the future and to prepare the documents for the decision-making level. He stressed five points:

- (1) Consensus about interest: There is no question about the importance of future involvement in ocean drilling in general, and France expects to continue.
- (2) We must take into account criticisms which emerged during these different meetings; uncertainties about the level of possible French participation post-1993; if there is no change in the program, then we have to reconsider.
- (3) We have to consider our participation in deep drilling with respect to other options in earth and ocean science - imagery, on-station studies, and submersible activity. There could be a debate to find some balance among these marine programs. It has been clearly said that there must be no scientific competition between the NEREIS initiative and ODP but budget levels for such an ambitious program are not clear.
- (4) A more ambitious program using different platforms is not reasonable in 1993, but we have to consider the possibility of such a new program before the end of this century: The question is, how can we think about an integrated new program using different tools?

(5) How are we to manage science between 1993-95? This situation is the concern of various committees. The French position will greatly depend on how the Europeans will face this future. The NEREIS concept has been passed to the ESF and discussed; we are at a stage of discussion, and a meeting in Strasbourg in July will see further discussion of this topic.

Biju-Duval gave his personal point of view, that in the future, active processes at the ocean bottom need attention; some problems require drilling, some do not.

T. Asai said that many international global-change earth-science programs are competing for funding in Japan. Some have been approved, some are awaiting approval; ODP renewal is one of the programs awaiting approval. However, ODP scientists in Japan are very active and productive, and so are highly appreciated. No specific actions have been taken so far on national level. Some science communities relevant to ODP are just beginning to discuss renewal in 1993.

K. Kobayashi commented on the task at hand for the scientific communities. They have a hard task because of competition from other international programs. The budget for extension will be considered in early 1992, so Kobayashi will have to work harder after this meeting to negotiate. He commented on the proposed new Japanese drilling vessel. The Japanese government has two independent organizations for supporting the sciences; one is the Monbusho (spelling?) and the other is the STA (Science and Technology Agency). STA is proposing construction of the new drillship. After construction, JAMSTEC will support the new drilling platform. Only money for a feasibility study has been approved so far. Negotiations seem to be progressing with the hope to start construction such that the ship will be in use by 1999. So, it will be available for cooperative work thereafter, but not for the next phase of ocean drilling.

H. Dürbaum requested some clarification regarding the international programs in competition with ODP. K. Kobayashi responded that they are multinational programs such as InterRIDGE and global change programs - specifically WOCE (World Ocean Circulation Experiment), IGBP, JGOFS (Global Ocean Flux Study).

Briden wanted to know the stated objective of STA in proposing this new drillship and what sort of things are they planning to do? In reply, Kobayashi handed out a memorandum prepared by STA (Appendix 1).

R. Riddihough stated that in the Canada-Australia Consortium, the problem of renewal has been discussed for the last 6 to 8 months, putting together a strategy for persuading the scientific community to support the program. Within the consortium there is no problem with Australia, who is quite happy to continue to contribute at the same level. But within Canada, there is the problem that the support is coming from two major sources, with the Geological Survey of Canada putting up most of the money. It would be unfortunate if the Survey decided that it had other priorities. The Survey has the same kinds of budget constraints Briden was talking about; by mid-1992 we must have a firm decision at high (ministry) level; Heinrich's proposed time table fits nicely. Some additional points:

- (1) A jump in contribution level would require extra justification.
- (2) Canada could not entertain a renewal for more than 5 yrs and even then, with 3-yr review before confirmation of the last two years' funding.
- (3) The biggest problem is community support - Canadian geology is mostly land geology. ODP must be joined to other current, large Canadian programs with which it otherwise competes, e.g. Lithoprobe program, Arctic programs, and an emerging continental drilling program.

Heinrichs summarized the presentation, saying that nothing has changed much since Amsterdam; timing seems to be about right with various slight modifications; everyone has to worry about competing programs and initiatives.

Expected Level of Program and Required Resources

D. Heinrichs used the LRP budget summary (Appendix 2) to project a modest (10%) increase in funding over the next 12 years with no major radical jump. The planning includes an upgrade in technology levels and continued use of existing capital facilities (*Resolution* and shore-based facilities). We expect to advance in some areas to improve logging, sampling, and interpretation, but we are not proposing to recapitalize the program, i.e. invest in major capital improvements (ships). Another issue is length of the extension; we have indicated that we will propose one significant extension of 8 to 10 years with a "sunset provision." Any successor program would grow out of ODP and would be a new program, not a mere continuation of ODP. Heinrichs could not see significant advances with less than a five-year extension. Regarding financing and international participation: the US would find it extremely difficult to survive alone. The ideal scenario would be inclusion of all international chartered science organizations; the minimum would be 4 international partners, but 5 or 6 would be more acceptable. US will seek to obtain roughly 50-50 support (US:international); 60-40 is acceptable but less international support than 40% would preclude extension. We have internal support for the program with firm numbers only to 1992; 1994 sees a step increment in technology (Appendix 3), when we will be requesting more funds.

Discussion

J. Baker commented that one part of the international activity towards renewal is trying to ensure that the accomplishments of scientific drilling are noted in the literature; we would like to see review articles for *Nature* and *Science* in early 1991 highlighting these accomplishments.

J. Briden suggested that Heinrichs may have minimized funding increases; as he interpreted the table, the actual increase is more like 20%. A hike like that would require taking requests to the highest level. He notes, however, that the step hike is identified as applied to technology. Presentation to higher authorities would be easier in those terms.

D. Heinrichs maintained that the increments of the LRP table amount to less than 10% increase. Some discussion and refinement will be necessary in future, but on a conceptual basis, this is the model that has been discussed since COSOD II, i.e., a modest increase based on technology. T. Pyle emphasized that these numbers are "guesstimates."

PREPARATION BY THE ADVISORY STRUCTURE (PCOM)

Scientific Recommendations to JOIDES

R. Moberly reminded EXCOM and the ODPC that the JOIDES advisory structure responds to a proposal-driven process, i.e. the response is to specific proposals for drilling. Through March 1990 we have continued to receive proposals for work in many oceans from many countries. A summary of the range in proposals, in relation to themes developed from COSOD and panel white papers, and abstracts of recent proposals, are included in the agenda briefing book. In general, there is a good set of proposals for almost all of the themes. Recommendations by panels include both old and new proposals. Science recommendations are moving along very well. It may be that we will have to focus

or solicit proposals on some themes. There are, however, two particular concerns that have occupied much of the PCOM's time: deep drilling and assistance in renewal.

Deep Drilling

Drilling deeper than 1.5 km is necessary for many of the highly ranked proposals, but there are major technological difficulties. Industry and member countries have made available much expertise; TEDCOM has looked at the problem of deep drilling and warned PCOM that this will be a problem. A Deep Drilling Working Group will meet in late September to estimate the scope of the problem. A preliminary report may be available when EXCOM meets again in October.

C. Dorman wanted to know which of the highly ranked programs require deep drilling. Moberly replied that most will not; these are based on existing proposals and that the present ranking of proposals reflects technical possibilities. Much of the future lithosphere and tectonics planning, however, will lead to deep drilling, *e.g.* volcanic margins and nonvolcanic margins around the North Atlantic and perhaps elsewhere. Very deep drilling in Cascadia or Barbados would need capabilities beyond present ones. But the ranking in the agenda book is more the near future; deep drilling will probably have post-1993 timing. If we had deep drilling capabilities now, there is no doubt that LITHP would want to drill the lower crust and upper mantle.

Assistance in the Renewal Process

The PCOM had a discussion by its international membership from the science point of view, along the same lines as today's EXCOM survey with respect to timing of the renewal process and problems. Some weak points were identified: *e.g.* better publicity. An ad hoc committee, chaired by J. Austin, was formed to help PCOM develop a strategy to aid renewal. It has met once. J. Austin is available to answer any particular questions or summarize some of the points of its first meeting.

J. Austin said that PCOM took this up partly as a response to criticisms by Coleman. They are considering a number of possible courses of action, but the strategy committee should report to PCOM before these are discussed at EXCOM; there would be an opportunity to discuss this with EXCOM this fall. Relative to publicity, the brochure to accompany the LRP is very appropriate, at least for US recipients. The committee seeks input from partners regarding the implementation of publicity strategies; the committee is interested in learning what has or could be done. Ad hoc committee workings can be discussed tomorrow, after the joint session.

Moberly added that there have been adverse comments other than the Coleman letter: for more drilling aimed at economic geology, more drilling at high latitudes, etc. Comments have come from many sources, but not many are accompanied by "I am on a powerful committee..." To most of the others you can say that we try to do what we can based on proposals received.

Concluding his report, Moberly stated that PCOM was told by France, with some support from other countries, that there should be a set of new technical advances, or planning for these advances, before approval of participation could be expected. It is critical that some new technology be added to the program even if it does cost money.

PREPARATION BY PROGRAM MANAGEMENT (JOI)

Identification of Technological Needs

The JOI office helped in the preparation of the briefing for the NSB as preparation for aiding member countries with similar presentations. T. Pyle announced the completion of the LRP, a brochure for the intelligent layman, and the assembly of a slick LRP folio for dissemination (copies were distributed at the meeting 21/6/90). In addition, the strategy committee has recommended inclusion in the folio of information on ODP interaction with global geoscience programs.

Support of New Technology

In preparation for program renewal and in response to recommendations from panels, target areas include: high-temperature tools, slimline tools, sampling and logging problems (see Appendix 4). JOI developed a proposal to get ODP going in this area based on existing continental drilling technology. The DCS is now at sea on its second trial, and could be one of the most important contributions of ODP.

Promotion of "dramatic" science objectives is important because these have a disproportionate effect on the science community.

Interaction with International Global Geoscience Initiatives (Appendix 5)

An important project has been the promotion of liaison groups to JOIDES:

Groups established: GSGP and FDSN.

Discussion complete: NSDP and Inter RIDGE.

Discussions begun: IGBP, JGOFS and ILP.

More effort needed: GPF (France), JAPEX (Japan), NEDRA (USSR), CCDP (Canada).

An ODP 'test hole' has been requested by FDSN, and sampling of ocean mantle at offsets by RIDGE.

Next Performance Evaluation and General Review of the Program

PEC nominations are due this meeting. J. Baker explained that JOI has a contractual agreement to review subcontractors' performance; there have been 2 such PEC reviews since the program's inception. Dürbaum requested more information about dates, stating that it is difficult to appoint PEC reviewers if the meeting times and work schedule are unknown. In response, J. Baker said that a preliminary report is needed by June of 1991, so most of the work will be done between Dec. 1990 and Feb. 1991.

COSOD III

Plans are very tentative and need to be firmed before further discussion.

Meetings Tailored to the Needs of International Partners

The JOI office will do whatever it can to assist. Heinrichs added that NSF could provide help from various levels; Bob Corell will assist in any way he can. Either JOI or *JOIDES Journal* can be consulted for upcoming ODP-related symposia. Announcements for such symposia should be sent to both the JOI and JOIDES offices.

Discussion

H. Dürbaum suggested that the European geothermal project could provide some information to ODP and offered to provide the necessary details. B. Biju-Duval mentioned a new project to combine deep drilling and deep soundings, possibly in the Afar region, is being considered. Connections with transects have been through M. Zoback, so far. Maronde suggested that both Karl Fuchs and Mark Zoback could provide input regarding regional stress programs.

486 NEAR TERM PLANNING

PROGRAM PLAN FOR FISCAL YEAR 1991

Scientific Drilling Objectives (PCOM)

R. Moberly addressed the Program Plan for Fiscal Year 1991 as determined by PCOM at its Annual Meeting (the plan is summarized in the EXCOM Agenda Book, p. 008-009) Because of lengthy trans-Pacific transits, PCOM made some adjustments to the FY91 Program Plan: A 2-week leg was inserted to drill and case to basement a reentry hole as a test site for the Federation of Digital Seismic Networks; the following engineering leg will attempt to clear junk from Hole 504B; next is a paleoceanographic investigation, the Eastern Equatorial Neogene Transect; the final leg scheduled will have lithospheric objectives, either deepening of Hole 504B or bare-rock East Pacific Rise drilling.

Dürbaum, referring to the test hole near Oahu, Hawaii, questioned the method by which seismic data would be brought to the surface. Moberly replied that ODP's responsibility is to drill the hole; instrumentation and data retrieval will be the responsibility of whoever proposes to emplace the instrumentation. Helsley added that there are 3 soon-to-be-abandoned cables near the site; other options are fibre-optic cable (expensive) or retrievable recording package. If the test-hole experiments are successful, future holes will undoubtedly be located far from islands. Biju-Duval commented on a cruise scheduled at 1991/1992 devoted to emplacement of a seismometer in an IPOD hole in the eastern Pacific with an accompanying ocean-bottom seismometer for comparison. The objectives of and relationships between the various downhole instrument liaison groups were then summarized by Moberly and Pyle. Dürbaum then suggested that a formal agreement regarding data distribution from such projects may be desirable.

Budget Committee Report (BCOM)

J. Briden (for B. Lewis) summarized the BCOM Report (Agenda Book p. 065). JOI overhead was less than expected and ODP experienced a decrease in insurance premiums, producing favorable conditions (extra funds) for improvements in technology. The difference in BCOM's \$39.75 million versus the 39.6 million reported by T. Pyle is an estimated \$150 K for a duplicate set of tools (turned down by NSF). The SOE (Special Operation Expenses, usually a minimum of 4%) is now at about 5.7%. Specific problems presented to the BCOM included: Recommendations to accelerate publications had been well implemented by TAMU, so they needed funds to print; concerns regarding transportation of core were addressed; DCS costs and demand from the science plan to have this system developed and tested as soon as possible. Most of the big priorities for the base budget put to BCOM by TAMU and Lamont were funded in the priority order set by them. The budget meets program demands for the upcoming year as a result of a number of favorable conditions which are unlikely to recur. The target of \$42 million for

the next fiscal year should be retained. Success in technology should result in yet more pressure on the budget committee.

Budgetary Resolution (JOI)

T. Pyle, reported on budgetary status, stated that JOI simply "lucked out." Budgetary targets (Appendices 6-8) were reached and JOI was able to make improvements in technology as well. The list of favorable budget conditions include: Day rate was lower than projected by about \$1 million; JOI overhead allocations changed resulting in \$400 K; and insurance rates were reduced. In general we are doing well in getting the "future-looking" projects funded.

Commenting on the development of high temperature tools, he stated that although cost estimates and feasibility studies were developed in discussions with SANDIA, in the near future a letter will go out to all members regarding requests for cooperative agreements for development of high temperature tool technology.

T. Pyle offered an update on the RFP for processing radiolarian samples (Appendix 9). Proposals have been received; a review board has been set up and a report is due at the end of this month. If approved, the project will go ahead in October of this year.

Resource Constraints, FY91 (NSF)

B. Malfait (NSF) identified the main argument for the science program and the LRP as a lack of money for technical development. There has been some interaction with JOI in changing the way indirect costs were allocated, resulting in a decrease in the dollars charged to the ODP contract at JOI, and that money is reprogrammable; however, other activities may see an increase in indirect costs. The fate of the 1991 budget is still very unclear; the 1992 budget level cannot be fixed now.

D. Heinrichs was asked to give some perspective on the long-range financing. He offered a summary of the NSF congressional budget request (Appendix 10), which is a restatement of Bush administration recommendations. Total ocean sciences division request is \$171 million for a 16% increase over FY90 (Appendix 11). The increase in base programs, including ODP, is about \$4.4 million, or about 5%. Largest percentage of funding for direct support to scientists is going to global-change programs with complementary support for related field programs. ODP has a proposed \$3 million increase (9.4 %; Appendix 12). Focus within the ODP will be both meeting operational costs and continued technological development. Depending on how reductions are allocated by Graham-Rudman Act, these figures may or may not be realized.

Over the years 1991-93, the Ocean Sciences Division (and the Earth Sciences Directorate) proposes to put a very heavy emphasis on global change research to bring it up to roughly one-third of the total budget (Appendix 13). Heinrichs then identified the major components of the global geoscience programs; future increases in funding will go toward achieving some balance between the various components (Appendices 14 and 15). Major increases to OCE global geoscience will be in 1991-93, tapering to steady state (Appendix 16). A recently proposed \$80 million budget cut for NSF will impact the earth sciences; the effects are unknown, but Heinrichs predicted that NSF will probably get almost all of its global change funds. Reductions probably will be in 'unspecified cuts' over the remainder of the budget. J. Baker stated that the cut probably will be more than the \$80-100 million recommended by the House Appropriations Committee.

PROGRAM OBJECTIVES, SPRING 1990 TO SPRING 1994

General Direction of the Vessel (PCOM)

R. Moberly reviewed information presented in the Agenda Book (p. 073-077). He elaborated on panel rankings, sites and technical feasibility of ranked programs. Programs may rise or fall within future rankings depending on progress in technological improvements. Future drilling will be concentrated in the N. Pacific and then move to the N. Atlantic; there are very few highly ranked programs in other parts of the oceans. The PCOM said that the vessel will operate in two main areas in the four years that began April 1990, in the Atlantic north of the equator and in the Pacific. Their preferred scenario is that the ship will continue in the Pacific until October 1992 and then transit to the Atlantic. With the insertion of the pilot hole north of Oahu, this may be modified by a few weeks, but that is the general scheme. The remaining highly ranked work in the Pacific amounts to about 9 programs (see Agenda, p. 013), and PCOM will choose from these during the Fall 1990 meeting. At its November, 1991, meeting, PCOM will choose from the top 5 Atlantic programs of each panel for the initial tour through the Atlantic.

The advisory structure has completely shifted from the regional to the thematic mode, and thematic panels have been pushed through their main ranking duties. In the future, they will focus on particular themes, or write their own proposals to refine some of the programs.

RESOURCES NEEDED FOR NEAR-TERM OBJECTIVES (JOI)

For FY91, ODP shows a 4% increase over last year (Appendix 17). Concerns are: (1) high-temperature, slimline tools and backups (2 tools, water sampler and temperature logging); a considerable amount of potentially expensive development that may be required in the future. (2) DCS costs are difficult to predict. (3) Other engineering developments are needed, such as coring in sand, a pressure core barrel, sealing of holes, and many more. (4) Inflation of salaries, day rates for various services, and insurance rates are uncertain. Some flexibility is built into the budget. Looking ahead, we can do incremental improvements in technology at just about any budget level, but certainly not at the ambitious levels of COSOD or LRP.

Discussion

Helsley reminded EXCOM that the projection made by the budget committee several years ago, i.e. \$42 million for 1992, is still valid. We need to emphasize that the budget should grow at about 5-6% each year. Otherwise there will be a sharp increase at renewal time, which is just what we want to avoid. \$42 million will do, \$40 million will not. Dürbaum voiced his support of funding the program such that technological developments are possible.

ESTIMATION OF RESOURCES (NSF)

Funding Outlook, Remainder of FY89-92 Program

Heinrichs noted that he has not done a major reevaluation of projections for program funds. In terms of a formal letter to the program, the existing one stands; note that the international partners' contributions level increased in 1990 to \$2.75 million, the same for 1992. If NSF gets its requested funding level in 1991, ODP will be in good shape to consider a significant increase over the \$40 million level. He was cautious because of incomplete

budget information for 1991, but personally was optimistic. The NSF aim is for a budget with a target figure of \$41.5 million for 1992.

Participation of USSR

Eric Block, director of the NSF, submitted a letter in January to the State Department requesting formal reconsideration of their decision not to admit the USSR in 1987. That request is under review, and the process is taking longer than expected. Dr. Bromley (Science Advisor to the President) convened an external panel that presented both the pros and cons; this panel met recently, their final report will not be available until some time next week. A draft version seems favorable. There are some technology issues; the program must meet US export control laws. Clearly, the drillship has equipment aboard that will remain on the export control list; the ship would have to be operated in a manner such that there would not be any export of that technology. Heinrichs expects difficulties will be resolved later this summer. If the USSR joins in 1991-92, the resource base for ODP will increase proportionately. If all goes well, the Soviets will probably enter the planning structure by mid-1991.

Discussion

The USSR is building a drilling platform under the mines and geology program, but for an unknown purpose. Nikita Bulganov indicated that the highest priority of the Academy of Science was to participate in international global programs. The USSR had dollars to participate in January 1990, but it is unknown whether those funds are still in place.

C. Dorman summarized what he knew about the scheduling of the ship construction; they have signed off on subsystems, and a positioning system. They are in the final design stage and will have a ship some time in 1993. Rosendahl said that there has been some discussion of their joint venture with a commercial company.

R. Anderson asked for further comment on admission of the IOC or the PRC. Heinrichs stated that NSF has heard nothing since last year from Taiwan, and no follow-up from the Peoples' Republic of China. Baker stated that Kitazawa of the Intergovernmental Oceanographic Commission is preparing a proposal to ODP to put together a consortium of many smaller countries, but its status is unknown.

Moberly asked if the USSR or other members join, and none are dropped, will there be any change in the number and length of legs from the present 6 per year? Heinrichs felt the answer to that was no, but ODP should be open to staffing problems. Briden remarked that members must be prepared to be relaxed when it comes to 1 co-chief per year.

487 PRESENT STATUS AND RECENT PAST OF THE ODP

PROGRAM MANAGEMENT REPORT (JOI)

Personnel and Other Changes: No major changes in personnel.

Public Relations

JOI is coproducing a film about ODP to be seen on US cable channels (Appendix 18). It is based on footage taken with US funds on Leg 105; the coproducer is in California and plans to start next month and finish next summer. The film may be marketed internationally. Questions can be addressed to Lee Stevens at JOI.

State of the FY90 Budget to Date

Budget is in good shape; 1 logging tool was lost on Leg 131, and help from NSF was requested to pay the deductible.

ADVISORY STRUCTURE REPORT (PCOM)

Moberly touched on the main points: The high attrition rate in panel chairs could be due to high demands placed on them lately. CEPAC has been dissolved. The JOIDES Office transfers to University of Texas at Austin; J. Austin and A. Maxwell will be the new chairs of PCOM and EXCOM, respectively. Miscellaneous actions taken at the April 1990 PCOM meeting are summarized in the Agenda Book.

EXCOM talked about the isotope policy last year; SMP has met, formulated a policy, and recommended no solutions of unstable or enriched stable isotopes be allowed on board.

Moberly lauded the interest of engineers and petroleum geologists from industry who participate in the advisory process.

Discussion

J. Austin added that the US JOIDES representative will be Dr. Craig Fulthorpe.

J. Briden questioned the PCOM April Minutes regarding the Ad Hoc Subcommittee statement that an "endorsement of ODP" by EXCOM was needed. Austin and Moberly replied to this, stating that part of the role of the ad hoc committee was to lobby the EXCOM for more energetic support. Basically, PCOM seeks the endorsement of a body with a broader scope than PCOM.

SCIENCE OPERATOR REPORT (ODP-TAMU)

P. Rabinowitz announced that Lou Garrison is retiring; Tim Francis will replace him. P. Rabinowitz summarized science operations since the last EXCOM, Legs 128 through 131. Leg 132, Engineering II, is now underway. Engineering objectives include: (1) Evaluating the performance and efficiency of the Phase II DCS; (2) Deployment and tests of the new mini-hard-rock guide base; (3) deployment and tests of a modified reentry cone; (4) Evaluation of techniques and hardware for establishing and maintaining upper hole stability for DCS deployment; and (5) Evaluation of the HRB or reentry cone/API drill string tensioning system for possible use as a mini-riser. It is premature to report on these engineering developments, that could be presented at the next EXCOM meeting.

Discussion

Dürbaum asked if the problem regarding synthesis papers had been resolved. Rabinowitz answered that occasionally a volume is published with no synthesis because the time frame is unrealistic for some chief scientists (see p. 171 agenda).

Thursday, 21 June 1990

WIRELIN LOGGING SERVICES REPORT (ODO-LDGO)

Personnel, Principal Drilling Results

Personnel changes at Lamont were listed in the handout distributed by R. Anderson. Anderson then reported on the principal logging results from recent legs in the western Pacific. A logging tool was lost during Leg 131, possibly because of the Kuro-shio current. Tool insurance will be affected; the last tool loss was on Leg 121. Recently, the logging program has been more aggressive, e.g. centralizers are back on drillstring, involving more risk. Logging efforts will continue to be aggressive.

After highlighting the utility of the FMS, Anderson explained that funds have been requested for an ODP computer operator to process FMS data onboard (up to 12 hours per station); 'FMACS' software will be distributed with FMS data.

Statistics, Participation in the Program

Handout contains a categorized listing of data requests for the year; there has been a general growth in requests for logging data. Wireline is doing well with distribution of data within ODP and industry in foreign countries; the next phase of ocean drilling should see the establishment of a computer-data network with satellite data banks allowing access to logging data.

Status of Tool Developments and Testing

Tests of the new wireline double-straddle packer were not attempted on Leg 131 because of poor hole conditions; it is ready to be deployed on the NE Australia Leg. Looking to the future, the *Resolution* should have the capability for measurement while drilling (the electronics are built on top of core barrel, requiring a wet-connect); wireline is joining the 'CONOCO Consortium' to monitor progress of this technique; a report was attached to the handout.

In March, Schlumberger announced MAXIS, a multitasking analysis system; used for imaging of a wellbore in real time. See Merrill-Lynch report in handout. This system is to be installed on *Resolution*. Letters from oil companies regarding oil-company interest in ODP also are appended.

488 MEMBERSHIP REPORT

CANADA-AUSTRALIA CONSORTIUM

R. Riddihough presented the membership report for the Canada-Australia Consortium. He remarked on a strategy for decision on renewal, stating that, despite recent technical difficulties with financial transfers, both Canada and Australia are in very good positions to negotiate for renewal. Having the ship off Australia soon, off Canada next year, near Canada the following year, and perhaps off Canada's Atlantic margin thereafter, makes it easier to generate enthusiasm for renewal. It is also a good opportunity to raise the profile of ODP within a primarily continental-based geoscience community.

One concern is that Canada is required to do an environmental impact assessment of drilling in Canadian waters; this will cost \$30,000 to cover hiring of a contractor to prepare the all-inclusive report, which is distributed up to the ministerial level before clearance will be granted. That makes everyone aware of drilling, but it could result in a stoppage. Canada is the first country to have to do this (at this level), but we think it can be done; further, it will serve as a model should other countries have to obtain similar assessments. On Juan de Fuca Ridge, for example, we may have to monitor effects of drilling in a region with established biological communities. Drilling is planned for a sedimented valley, where the communities may be unique, different from those on hard rock. The question then becomes how different is this particular community of organisms, considering that it will be destroyed in part.

A seminar is scheduled to coincide with the *Resolution* port call in Townsville, Australia. In Victoria, after drilling next year, we are hoping to set up symposium on ocean drilling and global systems for September 1991 to coincide with ship's arrival in Victoria. We are also trying to arrange for a shipboard signing of the Canada-Australia MOU. In October 1991, Roye Rutland, science coordinator for the PACRIM global change conference (Bangkok) has arranged for symposium for this program. Canada is on track for renewal; renewal is always a challenge, but we think it can be done.

EUROPEAN SCIENCE FOUNDATION CONSORTIUM

L. Westgaard presented the report for the European Science Foundation Consortium for Ocean Drilling. Westgaard reviewed personnel changes that had been announced at the Amsterdam EXCOM meeting; ESCO is now chaired by Cita-Seroni (Italy), the Secretariat has moved to Milan, while EMCO is now chaired by Ottosson (Sweden). EMCO meets only once per year, and at its recent meeting concluded that the organization of the ESF Consortium was satisfactory. There are some problems, e.g., countries that are late or don't pay; countries that don't show up for meetings. These problems are partly due to budgetary differences. NSF has been very understanding.

Regarding the scientific plan and budget proposals for coming financial years, we are happy to see no increase in fee; PCOM's plan to move ship into the Atlantic also makes it easier for us to negotiate for extension of MOU's. The time schedule for the renewal procedure for the ESF consortium fits nicely with NSF's, so there is no need for further discussion.

ESCO has been looking at statistics relating to European participation in ODP drilling cruises; they are happy to see that many young scientists are taking part.

M. Fratta reported on the International Conference, 'Geology of the Oceans,' co-sponsored by ESCO and the Societa Geologica Italiana, and held May 14-16 in Palermo, Italy. This was the third such conference of its kind; about 70 papers were presented, with about 200 scientists in attendance. Lou Garrison was an invited speaker.

FEDERAL REPUBLIC OF GERMANY

D. Maronde reported for the Federal Republic of Germany. With an increase of 5% and an inflation rate of 2.5%. 1990 shows an improving budget situation for ODP funding. Germany had a positive decision for the next five years with an annual increase of 5%, however, no one knows how much salaries will rise. The top ranking theme in FRG right now is reunification and it will influence the science situation. We are awaiting the political decision that DFG will operate in a unified Germany. In DDR there is no comparable ODP advisory or support structure, but the situation is changing very fast; there is some interest

from marine geoscientists. FRG's cooperation with partner countries will not change and is not influenced by the new situation.

The ODP Annual Colloquium was held 10-12 January in Bremen, hosting about 100 scientists and guests from European countries; Barry Harding presented a summary of technical improvements and achievements. In Bremen we had a discussion of the German LRP and received a positive vote. There is growing interest in scientific investigations in the Pacific, primarily based on research conducted aboard the *Sonne*. 1990 saw the approval of 31 ODP-related projects with a budget of 1.7 million US dollars. Beiersdorf has edited a special volume of *Geologische Rundschau* with highlights of German participation in DSDP. At the end of 1989, Karl Fuchs' group received permission to obtain one borehole televiwer.

ODP-related activities included the planning of a study on reconstruction of the *Sonne*; the decision to go ahead will require upwards of 10 million US dollars. Construction starts at the beginning of next year, with tests next fall. Dr. Bungenstock of BMFT is retiring on 31 August; he was a very reliable counterpart for us and very helpful. He extends best wishes and greetings to EXCOM. In October 1989, in Bonn, a meeting with the theme '40 years science in the FRG' included a presentation by Dr. E. Seibold on the development of the geosciences, with highlights of the ODP and KTB programs. This will help the future of ODP because many politicians attended. On 1 September 1989 the new DFG priority program "global and regional driving mechanisms of biogenic sedimentation" started: (1) reef evolution and time, and (2) Cretaceous sedimentation. The program has a budget of about 1.4 million dollars US. The official opening of the main hole in Windisch-Eschenbach will be on 8 September 1990 with a rigging party in relation to the following conference on continental superdeep drilling in Regensburg on 10-11 September. H. Dürbaum added that just before the start of the deep hole there will be in Bayreuth during 4-7 September, a symposium on seismic reflection investigations of the crust (continental and margins). He then summarized the 31 proposals for ODP-related research this year; many proposed to work on paleoclimate, mass balancing and petrology.

FRANCE

B. Biju-Duval presented the member report for France. In the short term, the 1990 budget is not satisfactory; the level of funding for science support remained stable, but taking inflation into account, this funding actually decreased. The budget for 1991 is still in preparation; no trouble is anticipated regarding general support for sea operations, but science support will be a battle. There have been a few changes in the ODP organization. A new advisory committee (Jean Aubouin) has been formed to look into the future and see what kind of action is needed for helping the program; the committee consists of scientists active during the DSDP and IPOD phases of ocean drilling; this committee has met only once.

A number of ODP-related cruises are scheduled, including 3 MCS surveys in the Atlantic (2 were carried out in the Equatorial Atlantic in April-May) and 2 cruises for diving and reentry of IPOD holes (temperature measurements and seismometer emplacement). Biju-Duval then described several additional MCS and submersible cruises proposed for next year. A general earth sciences meeting will occur at the beginning of July, at the ministry level in Strassbourg. The InterRIDGE meeting just took place in Brest. The annual meeting of the Société Géologique de France will occur in Nice, at the end of 1990. Biju-Duval showed an artist's view of the *l'Atalante*, which will be launched in the Atlantic in October, 1990.

In the mid- to long term, France does not expect any big problems until 1993. We will have to organize the budget and meetings. By 1993 we will have had many meetings; we have to look at the post-1993 program within the framework of cooperation with other European organizations. The consensus is that there is high interest for ocean drilling in general; what is not completely clear is why the probability to continue this program is low at the moment.

JAPAN

K. Kobayashi presented the member report for Japan. His presentation included a summary of cruises for the northwest Pacific. EXCOM was shown examples of recordings from the downhole seismometer emplaced during Leg 128 about 700 mbsf in Hole 794D in the Sea of Japan, and since serviced by the *Tansei Maru*. The *Kaiko Maru* conducted electrical resistivity experiments at Hole 794E, Leg 129. Attempts to deploy the ONDO downhole temperature-measuring device during Leg 131 (Nankai Trough) were unsuccessful; Kobayashi thanked the PCOM Chairman for permission to deploy the ONDO device during the following leg. Results from the recently conducted (beginning of Leg 132) ONDO deployment were not available.

ODP-related activities included a national conference on the results of recent ODP Bonin-Mariana research that was attended by more than 80 scientists. Two domestic meetings were held in January and March 1990 regarding ODP results in the Indian Ocean (Oman Margin and Bengal Fan) with special attention to the paleoclimatic effects of Himalayan upheaval. Two special issues have been published on the Indian Ocean.

UNITED KINGDOM

J. Briden presented the membership report for the United Kingdom, beginning with the renewal-process timetable. The UK is in the process of assembling a brochure for inclusion with the LRP to be distributed to UK nationals. Secondly, The UK is setting up a national review to justify continuation. Third, at a meeting at the Royal Society next spring, we will be regarding justification of renewal based on scientific presentations. At this time next year, we may be able to report how the review has gone. If all has gone well, then we must go to NERC for "core" funding (continuation). Help from JOI (an NSB-type presentation) would only be requested in the event of having to request additional funds at high level. ODP funds for the science program are secure until 1994. During the recent grants round, the caliber of proposals and the level of competition were high.

ODP is becoming one key element amongst the marine geosciences program. A British element of the RIDGE has bid for substantial new funds; a new UK paleoclimate program will fit in well with European programs along the same lines.

The keel was laid for the fully ice-strengthened hull of the *James Clark Ross* to replace the *John Briscoe*, much more of a research ship than its predecessor; multibeam sonar is in the plan. The *Discovery* will be stretched by 20 m.

UK is frustrated with its poor record (overlooking GLORIA and some others) for technical innovation; a deep-tow side-scan sonar (TOBI) has had some successful trials in the past few months. UK has more ambitions to develop its technological capabilities, especially for seafloor laboratories, in collaboration with France. An MOU with IFREMER is to be signed soon, either 9 or 10 July.

Next spring the national ODP meeting will be at the ministry level. Next week we have a

seminar at the Royal Geographic Society on results from the recently completed circumnavigation of the globe by the *Charles Darwin*, 1986-89. The importance of this symposium is the general high level of awareness. J. Briden will retain membership in EXCOM; next year, the new chair of NERC, J. Knill (an engineering geologist) will take over as ODPC member.

UNITED STATES (NSF and JOI)

B. Malfait gave the first part of the US report. D. Heinrichs had presented budget details previously; in Fiscal Year 1990 the overall NSF budget went up a little over 18% (Appendix 19), but ocean sciences were up only about 1%, partially in response to the previous year, when Congress protected the budget. ODP budget was stable or slightly down (Appendices 20-22).

1991 requests were up 14%; geoscience requests are up 18%; ODP requests increased 9% (3 million). Budget highlights:

Operations:	21.5 (million dollars)
Unsolicited science:	5.4
USSAC:	4.0
NSF contributions:	1.0

Malfait then highlighted some of the international cooperative programs supported by NSF. The five field programs are: MCS on the *Ewing* for the New Jersey Shelf Program; Near-bottom Refraction at 9°N on *EPR*; MCS on West coast of Antarctica; Deep-Tow survey in the Vema transform area. Over the last year we have seen an increase in downhole programs and data analysis from logging data proposals. NSF is supporting participation in the Nautilite reentry program, cooperative development of instrumentation for monitoring temperature in some of the drillholes in the Middle Valley program, and a shallow water drilling program in the Bahamas using a 'jack-up' platform.

Finally, an update on *Bernier* refitting (renamed the *Ewing*) - the ship is at sea now on its shake-down cruise; the *Knorr* and *Melville* are to be stretched; the University of Washington ship "*Thompson*" to replace the old *Thompson* will be operational by mid-1991. Division of Polar Programs has obtained a contract for a new 300-foot ice strengthened vessel to be ready by 1992, possibly with full multichannel capability. DOSAC has moved its operations to TAMU, and NSF is currently funding an engineer there, half-time. An index for DSDP volumes will be published through TAMU in hard copy and on CD-ROM. The possibility of USSR membership is being reconsidered.

T. Pyle presented the USSAC report. USSAC-funded research (Appendices 23 and 24) consists of a number of small projects, generally less than \$100 K. Currently funded USSAC workshops (Appendix 25) include such topics as the upper igneous crust, upwelling systems, paleogene paleoceanography, travel support for the global sedimentary geology program at the SEPM meeting, plus some additional workshops pending. These are listed in the *JOIDES Journal* as they are funded.

F. Spiess has submitted a proposal for a wireline reentry system. More than 350 CD-ROM data sets have been distributed. The advisory committee suggests more USSAC emphasis on education. Pyle then distributed copies of the Long Range Plan.

489 FUTURE MEETINGS

The next EXCOM meeting is scheduled for 2-4 October 1990. G. Boillot announced that the meeting will be held 2-3 October 1990 at the Laboratoire de Geodynamique Sous Marine, Observatoire Oceanologique de Villefranche. Brochures were distributed. The hotel accommodations will be in Nice. It may be possible to offer a field trip to study tectonism related to opening of the Mediterranean Sea, the day after the meeting, 4 October. As the JOI Board of Governors normally meets immediately after the meeting, this will have to be resolved, perhaps by an intra-meeting field trip, as has been the case in the past.

The Joint ODP Council-EXCOM Meeting can coincide with a port call of the *JOIDES Resolution*. That must be in June 1991 on the west coast (possibly San Diego) or in March in Hawaii. The dates are uncertain and will depend on ship-scheduling decisions made at next PCOM meeting. An invitation was accepted to meet at Scripps during a San Diego port call in late June, so EXCOM members can visit the ship during its port call. Notification of a firm date and venue will be sent by 1 September.

Heinrichs elaborated on timing problems in response to criticisms of the meeting schedule. Eventually, EXCOM may have to move its Fall meeting to November or December.

EXCOM Business Meeting
Thursday, 1:15 PM, June 21, 1990
Washington, D.C.

490 CALL TO ORDER AND APPROVAL OF MINUTES

Corrections to the minutes were given by Dürbaum and Westgaard.

EXCOM Motion

EXCOM approves the minutes for the 3-4 October 1989 Executive Committee Meeting. (Motion Biju-Duval, second Dürbaum)

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

491 ADOPTION OF AGENDA

Several items were added to the New Business section: (1) Possibility of EXCOM members joining the drillship for the short drilling leg off Oahu; (2) Disciplinary balance on the PCOM; and (3) Resolution citing publication schedule.

EXCOM Consensus

EXCOM adopted the agenda as listed and amended for the 21 June 1990 Executive Committee Meeting. (There was no vote.)

492 FUTURE OF OCEAN DRILLING

EXTENT OF ACTIVE EXCOM SUPPORT

C. Helsley introduced the topic, stating that several US members of PCOM raised questions as to continuation of the joint program. Moberly commented further that some PCOM members are chosen because of their interest in drilling and it wasn't certain to all members that there was an equal commitment from the corresponding heads of member institutions. Helsley said that the undertone, or attitude, implied by the language of the statement included in the Agenda Book (p. 172-174) needs to be removed or clarified before renewal.

R. Riddihough remarked that John Malpas also expressed concern and that he and Malpas have had a number of arguments about it. Many EXCOM members serve on several decision-making committees simultaneously and must set priorities as must any other senior manager. C.Helsley replied that although that is the reality, unfortunately, the community is reading that as a lack of support on the part of EXCOM.

J. Austin stressed that the statements on p. 172-174 should not be taken literally and do not require a formal endorsement. PCOM is seeking support for what it sees as an exciting program. M. Leinen explained that one point highlighted at PCOM was the substantial difference between ODP and similar organizations. The structure of this program has EXCOM at its top; other programs have interest-selected executive committees, whereas EXCOM has the heads of institutes. EXCOM is never called upon to evangelize. PCOM is very sensitive to the fact that EXCOM members are directors of institutes and agencies, and as PCOM looks upon the funding agencies in different countries, it wonders if they will

form an opinion that EXCOM members' support for ODP is somewhat diluted. Austin added that these statements are an admission of frustration by the PCOM, as custodians of the science side of the program, that there are limits to its influence. When PCOM receives a letter like the one from Coleman, it is clear PCOM is not 'reaching' some parts of the scientific community to which EXCOM might have more ready access. Merrell said that this serves notice to the institutions to start campaigning.

C. Helsley felt that PCOM has reacted very strongly to the Hsü and Coleman letters; PCOM is looking to EXCOM for support and it would be nice to have something in the minutes to that effect. Moberly then summarized his correspondence with both Hsü and Coleman. Baker has suggested one action item could be a letter from EXCOM stating current status of movements toward renewal.

Austin expressed one aspect of the frustration of PCOM, *i.e.*, some feel that ODP is not addressing the themes adequately, but there is no evidence that EXCOM sees things the same way. Many feel that ODP is too much like DSDP. One of the questions discussed is to bring a more detailed focus to the program, for example, to identify six themes and spend as much time as necessary on each. That, however, would require a further change for the advisory structure. J. Baker added that one reason for PCOM to set up the strategy committee was for that committee to identify the main concerns. Those should be brought to EXCOM and discussed at the October meeting. D. Heinrichs said that if we extend the program, that will allow us to extend the planning window; *i.e.* come back years later to do more thematic research. The research mode should evolve to address the LRP.

R. Moberly said that from this discussion, his understanding is that EXCOM would prefer that PCOM discuss the report of the ad hoc committee and if it seems appropriate, raise this issue again at EXCOM. He also asked if NSF would request the Ocean Studies Board to provide a formal review soon of the LRP, as had been urged. D. Heinrichs responded that the LRP will be sent to the Academy of Science, as part of a proposal for extension of the program, for review but the timing of a response is uncertain. Both the Ocean Studies Board and Board of Earth Sciences and Resources will participate in the review, but the structure is uncertain. NSF is not asking the Academy to provide the JOIDES function of reviewing the yearly or daily guidance of the program.

EXCOM Consensus

Let these minutes show that EXCOM discussed this issue, and endorses and supports renewal of the Ocean Drilling Program. For anything further, PCOM should make a concrete proposal to EXCOM.

493 NEAR-TERM PLANNING

ADOPTION OF FY91 PROGRAM PLAN, INCLUDING BUDGET

The 4-year plan and the PCOM motion modifying the plan are on p 020 of the Agenda Book.

Discussion

With regard to the motion for adoption, R. Riddihough voiced some concern that the way that the Oahu test hole appeared at TECP seemed a "put-up job" and there has been some resentment. The conscious effort by the program to broaden its efforts is clear now, but

wasn't at the time of the meeting. Moberly said that some abstained from voting because of the way the topic was introduced.

Dürbaum asked about problems with timing of testing the DCS. Moberly replied that modifications and upgrades that have been made to date are being tested on Leg 132. It will take time for further upgrading and modifications. It was TAMU's request that the next engineering leg not be close to the present one that will end in early August. This Program Plan is appropriate; i.e. scheduling of the next engineering test leg allows sufficient time for further development ashore of the DCS and high temperature tools.

EXCOM Motion

EXCOM accepts the FY91 Program Plan, including budget, with the accompanying PCOM motion modifying the FY91 Program Plan. (Motion Caldwell, second Nowell)

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

OTHER NEAR-TERM PLANNING

Pyle reminded EXCOM that JOI would be sending out a letter to partners requesting them to initiate any informal discussions regarding renewal immediately, because of time constraints.

Helsley thanked the Budget Committee.

494 OLD BUSINESS

PARTICIPATION BY LESSER-DEVELOPED COUNTRIES

J. Baker repeated that Dr. Kitazawa of the Intergovernmental Oceanographic Commission (IOC) asked for information regarding organization of a consortium and would put together a proposal from IOC, but it remains in his hands. Baker suspects that they do not appreciate the difficulty and expense involved and so the probability that we will receive a proposal is low.

NOMINATIONS FOR NEXT PERFORMANCE EVALUATION COMMITTEE (PEC)

In response to questions by Riddihough, J. Baker outlined the kind of person needed: one who knows a lot about the program, but is not now involved, or may never have been involved at all. For example, Chuck Drake, a past chair, had not been involved for more than 10 years prior to his involvement on PEC 2. Persons may be from academia or industry; there must be a mixture of US and non-US; and from any institution at all, JOI or non-JOI. No committee members and no proponents, in general, should sit on the committee. Needed are persons willing to spend the time and having a broad perspective; suggestions for chairman are welcome. Six or seven persons is an ideal number, but the size can be adjusted. The main charge to the committee is to determine that the science objectives are being met by the program administrators, so a person nominated need not be a high-level administrator.

C. Helsley instructed EXCOM to submit written nominations totaling 10-15 persons to Baker through Helsley. Names mentioned at the table were: F. Goerlich, K. Heier, J-P. Cadet, R. Schlich, C. Summerhayes, A. Loughton, C. Harrison, D. Rapp, G. Schumacher, M. Talwani, D. Hussong, D. Roberts, M. Keene.

ADOPTION OF TERMS OF REFERENCE AND MANDATES FOR LIAISONS

PCOM asked EXCOM to approve the motion on p. 21 of the Agenda Book.

Discussion

In response to questions from Caldwell about the motion, Moberly explained that each liaison group is a 4-person committee, 2 co-chairs and 2 members. As an international body, ODP cannot form liaisons with national bodies. JOI has taken the initiative and made the initial contacts; JOI identifies such a group, then PCOM decides if the liaison would be appropriate. If so, it names the JOIDES co-chair and member.

Dürbaum noted the letter from JOI to Dzewonski, requesting names sent to the PCOM chairman; if we approve this motion, the wording of future letters should be changed. Helsley agreed, stating that the letter was written before there was a policy or mandate, but the intention of the letter is that PCOM provides approval.

Rosendahl asked the reasons for the 4 abstentions from the PCOM vote on this motion. Moberly replied that some PCOM members and alternates at the Paris meeting were, or will be, connected to liaison groups and therefore could be viewed as having a special interest.

EXCOM Motion

EXCOM approves the proposed mandate and terms of reference for Liaison Groups as stated in the agenda book. (Motion Rosendahl, second Stoffa)

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

495 NEW BUSINESS

LOU GARRISON'S RETIREMENT

EXCOM Motion

Be it resolved that EXCOM express its appreciation to Lou Garrison for his important contributions to the success of ODP. (Motion Biju-Duval, second Caldwell)

Approved by acclamation.

PUBLICATIONS SCHEDULE

J. Briden read a statement that expressed the consensus of EXCOM:

EXCOM notes with approval the successful efforts of all concerned in bringing the publication of Initial Reports and Scientific Results on to schedule.

PARTICIPATION IN THE 1-2-WEEK LEG OFF OAHU

Several EXCOM members have expressed interest in participating in the short leg off Oahu (first 1-2 weeks of March). P. Rabinowitz asked for a head count: Riddihough, Dürbaum, Schilling, Moss, Briden. These persons are to write to Rabinowitz as soon as possible, as

TAMU is now staffing that leg; each should be sure to state whether interested in 1 or 2 weeks. D. Heinrichs noted that there are 3 or so NSF berths.

DISCIPLINARY BALANCE OF PCOM

J. Austin brought to the attention of EXCOM what could be a problem for 1991. US representatives leaving PCOM in 1990 are Brass, Kastner and Langseth. There is some concern that PCOM will be weighted heavily towards geophysics and petrology, with potential gaps in expertise in the areas of ocean history and geochemistry.

OTHER NEW BUSINESS

BCOM Nominations

B. Lewis steps down from BCOM; for the Fall 1990 meeting, EXCOM will need the nomination of a US EXCOM member for BCOM.

Retirement of B. Biju-Duval

C. Helsley thanked B. Biju-Duval for serving on EXCOM and wished him well in his new pursuits. He expressed EXCOM's appreciation of B. Biju-Duval:

EXCOM recognizes its long-term member from France, Bernard Biju-Duval, for his contributions and steadfast devotion to the Ocean Drilling Program.

Fall 1991 EXCOM Meeting in Germany

Dürbaum suggested the dates 1-3 October 1991, probably in Bonn with some excursion in the Eifel area.

The meeting was adjourned at 2:55 PM.

APPENDICES ATTACHED TO THE 20-21 JUNE 1990 EXCOM MINUTES

1. On an Investigation of Developing a Deep-Ocean Drilling Vessel in STA
2. LRP Budget Summary
3. Table 5-LRP
4. Preparation for Program Renewal
5. Coordination with Other Geoscience Programs
6. FY90-91 Budget Summary
7. Summary of FY91 Special Operating Expenses
8. FY91 Program Plan
9. RFP Processing Radiolarian Samples
10. NSF Congressional Budget Request
11. NSF Ocean Sciences Budget
12. OCE Long-Range Plans (1989-1995)
13. Global Geosciences Program Balance
14. NSF Program Balance
15. OCE Global Geoscience Projections
16. OCE Core Program Projections
17. JOI Projections
18. ODP Film
19. NSF Congressional Budget
20. FY 1990 NSF/ODP Funding
21. FY 1990 NSF/ODP Unsolicited Science Funding
22. Other Items
23. Site Survey Augmentation
24. Other JOI/USSSP Programs
25. Workshops

LIST OF HANDOUTS FROM THE 20-21 JUNE 1990 EXCOM MEETING

1. Wireline Logging Services Report
2. Long Range Plan

Memoir provided by the Science & Technology Agency, Japan

On an Investigation of Developing a Deep-Ocean Drilling Vessel in STA

Upon recognition of necessity of sophisticated tools for research and observation on the ocean floor in addition to currently available systems of survey on land, it is highly required that we possess our own deep-ocean drilling vessel capable of deploying various types of observation apparatus, and facilitating more frequent geological investigation at seas around Japanese Islands associated with complex sets of plates. This desire has been magnified by request of immense effort for prediction of natural hazards such as destructive earthquakes, tsunamis and volcanic eruptions which have much influenced daily lives in our country.

Moreover, needs of elucidation of mechanism of variations in climates and environments in the past are recently growing from viewpoints of the global change problem. It is understood that scientific research proposals for use of the ocean drilling vessels are so huge in number that only one ship, the JOIDES RESOLUTION, can not accommodate the whole needs of the world scientific communities.

The Science and Technology Agency of Japan (STA) has just contracted the Japan Marine Science and Technology Center (JAMSTEC) to study needs of the deep-ocean drilling vessel, technological feasibility of its development, desired specification of vessel, if constructed and the most desirable way of operation after completion, *etc.* However, it should be noted that it does not imply our final decision of construction but it is a feasibility study.

Whether or not it is built will depend upon results of the feasibility study as well as negotiation with financing agency and nothing can be definitely said at this moment on such decisions.

Assuming that the construction by STA is approved, it is intended that the vessel will be operated under the following principles;

- (1) Co-existence of the STA program with ODP and its supplements to ODP

This project by STA aims to supplementing the Ocean Drilling Program. Care will be taken to avoid conflict with ODP. Our drilling vessel will be operated for internationally cooperative structures including ODP as far as our domestic demands are fulfilled. STA recognizes that partnership with ODP be continued by the Ocean Research Institute, University of Tokyo under financial support of Monbusho.

- (2) Operation with international coordination

An advisory committee is planned to be organized by members including persons related to ODP and other non-Japanese leading researchers to discuss guidelines of operation.

- (3) Doors open to excellent researchers from other countries
Onboard participants are not restricted to specified countries. Excellent scientists from developing countries are also invited.

Operating characteristics, specifications etc. of the planned vessel have not yet been fixed, as they will be decided according to conclusion of the feasibility study groups and other planning bodies.

Although schedule of construction of the ship is undecided, the most probable date for start of its scientific operations is expected to be later than 1999.

Table 4: Long Range Plan Budget

Standard Operations	1989	1990	1991	1992	1993	1994
<i>Science Operator</i>						
Headquarters	1,664,500	1,773,847	1,888,038	1,971,595	2,059,769	2,152,824
Science Services	3,152,677	3,449,049	3,637,101	3,835,870	4,045,981	4,268,098
Drilling & Engineering	3,121,660	3,164,132	3,297,628	3,437,443	3,583,906	3,737,363
Technology & Logistics	3,035,832	3,485,463	3,650,608	3,824,343	4,007,142	4,199,510
Science Operations	956,831	1,002,083	1,053,566	1,107,878	1,165,183	1,225,650
Subtotal	11,931,500	12,874,574	13,526,941	14,177,129	14,861,981	15,583,445
Ship Operations	18,572,500	19,019,008	19,589,578	20,177,266	20,782,584	21,406,061
Subtotal	30,504,000	31,893,582	33,116,519	34,354,395	35,644,565	36,989,506
<i>Wireline Logging</i>						
Operations	1,280,912	1,357,664	1,414,749	1,474,528	1,537,140	1,601,700
Schlumberger Subcontract	1,677,088	1,756,555	1,861,948	1,973,665	2,092,085	2,217,610
Other Subcontracts	65,000	25,000	25,000	25,000	25,750	26,523
Subtotal	3,023,000	3,139,219	3,301,697	3,473,193	3,654,976	3,845,833
<i>Program Management</i>						
Subtotal	1,600,000	1,671,999	1,755,599	1,843,379	1,935,548	2,032,325
Total Standard Operations	35,127,000	36,704,800	38,173,815	39,670,967	41,235,088	42,867,664
Special Requirements *						
<i>Science Operations</i>						
Science Services	0	0	203,500	203,500	271,000	271,000
Drilling & Engineering	405,000	979,600	1,940,000	1,940,000	2,902,500	2,402,500
Technology & Logistics	0	0	195,000	195,000	195,000	195,000
Science Operations	17,000	170,000	335,000	335,000	335,000	235,000
Ship Operations	588,000	0	0	1,000,000	0	2,000,000
<i>Wireline Logging</i>						
Special Tools	0	82,600	382,600	282,600	350,000	350,000
<i>Program Management</i>						
Special Program Needs	13,000	63,000				
Total Special Requirements	1,023,000	1,295,200	3,056,100	3,956,100	4,053,500	5,453,500
TOTAL PROGRAM (in U.S. Dollars)	36,150,000	38,000,000	41,229,915	43,627,067	45,288,588	48,321,164

1995	1996	1997	1998	1999	2000	2001	2002
2,251,042	2,354,719	2,464,171	2,579,730	2,701,748	2,830,600	2,966,680	3,110,407
4,502,922	4,751,198	5,013,713	5,291,302	5,584,850	5,895,294	6,223,624	6,570,891
3,898,180	4,066,743	4,243,461	4,428,762	4,623,103	4,826,963	5,040,848	5,265,295
4,404,978	4,615,109	4,839,498	5,075,775	5,324,606	5,586,695	5,862,788	6,153,674
1,289,462	1,356,812	1,427,901	1,502,946	1,582,176	1,665,830	1,754,166	1,847,453
16,346,584	17,144,581	17,988,744	18,878,515	19,816,483	20,805,382	21,848,106	22,947,720
22,048,243	22,709,690	23,390,981	24,092,710	24,815,492	25,559,956	26,326,755	27,116,558
38,394,827	39,854,271	41,379,725	42,971,225	44,631,975	46,365,338	48,174,861	50,064,278
1,668,972	1,739,069	1,812,109	1,888,218	1,967,523	2,050,159	2,136,266	2,225,989
2,350,667	2,491,707	2,641,209	2,799,682	2,967,663	3,145,722	3,334,466	3,534,534
27,318	28,138	28,982	29,851	30,747	31,669	32,619	33,598
4,046,957	4,258,913	4,482,301	4,717,751	4,965,933	5,227,551	5,503,351	5,794,121
33,941	2,240,639	2,352,670	2,470,304	2,593,819	2,723,510	2,859,686	3,002,670
44,575,725	46,353,823	48,214,696	50,159,280	52,191,727	54,316,399	56,537,898	58,861,069
271,000	271,000	271,000	231,000	231,000	231,000	231,000	231,000
2,902,500	2,402,500	1,337,500	987,500	1,337,500	987,500	175,000	175,000
195,000	195,000	195,000	195,000	195,000	195,000	195,000	195,000
235,000	235,000	235,000	235,000	235,000	135,000	135,000	135,000
2,500,000	1,000,000	0	0	1,000,000	600,000	0	0
250,000	200,000	250,000	250,000	250,000	250,000	250,000	250,000
6,353,500	4,303,500	2,288,500	1,898,500	3,248,500	2,398,500	986,000	986,000
50,929,225	50,657,323	50,503,196	52,057,780	55,440,227	56,714,899	57,523,898	59,847,069

TABLE 5: Cost Estimates for Engineering Developments and Special Operations

	Engineering and Operational Requirements	Scientific Objective Addressed	Phase I 1989-1992 (x \$1,000)	Phase II 1993-1996 (x \$1,000)	Phase III 1997-2002 (x \$1,000)
1.	4km Diamond Coring System	1, 2, 3, 4, 7, 8, 9, 13	1,390	—	—
2.	6km Diamond Coring System	1, 2, 3, 4, 7, 8, 9	—	1,000	200
3.	Slimline riser and blow-out preventer	1, 2, 3, 7, 8, 9, 10, 11	300	5,000	1,500
4.	Improved sediment-coring systems	7, 8, 9, 10, 11, 12, 13	250	200	150
5.	Borehole seismometers and operations of seismic systems	2, 4, 5	600	600	600
6.	High-temperature systems	3, 4, 11	1,000	1,510	750
7.	Improved packer and fluid samplers	4, 5, 8, 11	800	500	300
8.	Oriented core samples	1, 2, 5, 6	250	250	—
9.	<i>In-situ</i> pressure sampler	7, 8	250	250	150
10.	Slimline logging and borehole experiments	1, 2, 3, 4, 7, 8, 9, 10, 11, 13	650	2,000	—
	TOTAL		5,490	11,310	3,650
11.	Alternative vessels	1, 7, 8, 13, 15			
	Jack-ups		—	2,000	2,500
	Arctic D/V		—	—	—

PREPARATION FOR PROGRAM RENEWAL

- PREPARE BRIEFING FOR U.S. NATIONAL SCIENCE BOARD

- COMPLETE LONG RANGE PLAN (LRP)
- WRITE BROCHURE
- DESIGN FOLIO AND PUBLISH LRP, BROCHURE AND FOLIO (+ Inserts?)

- PROMOTE LIAISON GROUPS (see separate vugraph)

- DEFINE TECHNOLOGY REQUIREMENTS
 - HIGH TEMPERATURE (350°), SLIMHOLE DRILLING, SAMPLING AND LOGGING
 - WHERE AVAILABLE AND AT WHAT COST?
 - DIAMOND CORING SYSTEM

- PROMOTE "DRAMATIC" SCIENCE OBJECTIVES
 - OBS TEST HOLE OFF OAHU
 - SAMPLING OF OCEAN MANTLE (ON OFFSETS?)

- TO BE DEFINED
 - PROGRAM EVALUATION (PEC-3)
 - NOMINATIONS AT THIS MEETING
 - COSOD-III
 - "MEETINGS TAILORED TO NEEDS OF PARTNERS"

COORDINATION WITH OTHER GEOSCIENCE PROGRAMS

LIAISON GROUP CONCEPT APPROVED BY EXCOM IN NOVEMBER

GROUPS ESTABLISHED/ODP NOMINEES

- **GSGP (Global Sedimentary Geology Program)**
- **FDSN (Federation of Digital Seismic Networks)**
- **NSDP (Nansen Arctic Drilling Program)**

- **Inter RIDGE**

DISCUSSIONS BEGUN

- **IGBP (International Geosphere/Biosphere Program)**
SSC 1, "Global changes of the Past"
- **JGOFS (Joint Global Ocean Flux Studies)**
- **ILP (International Lithosphere Program)**
Coordinating Committee for Continental Drilling - M. Zoback
 - **US/CSDP (Continental Scientific Drilling Program) NSF, DOE, USGS**
 - **FRG KTB (Kont. Tief Bohrprogramm)**
 - **Italy ENEL/UNG (Ente Naz. Energia Elettrica/Unita Naz. Geotermica)**
 - **UK Geothermal Energy Project**

MORE EFFORT NEEDED

- **Other continental drilling/geothermal programs**
 - **France GPF (Geol. Prof. France)**
 - **Japan JAPEX**
 - **USSR NEDRA**

FY90-91 Budget Summary (\$K)

	FY90			FY91		
	Std.	SOE	Total	Std.	SOE	Total
Drilling & Engineering	3,164	980	4,144	3,366	1,293	4,659
Tech. & Log. Support	3,485		3,485	3,675		3,675
Sci. Operations	1,002	170	1,172	1,042	100	1,142
Science Services	3,363	86	3,449	3,494	209	3,703
Headquarters/Admin.	1,809		1,809	1,854		1,854
Subtotal	12,823	1,236	14,059	13,431	1,602	15,033
Ship Operations	18,969	50	19,019	19,284		19,284
Total TAMU	31,792	1,286	33,078	32,715	1,602	34,317
L-DGO						
General	1,279	161	1,440	1,484	256	1,740
Schlumberger	1,757		1,757	1,832		1,832
Total LDGO	3,036	161	3,197	3,316	256	3,572
JOI/JOIDES	1,672	53	1,725	1,341		1,341
MRC's*		0		70		70
Totals	36,500	1,500	38,000	37,892	1,858	39,300
NSF Target			38,000			39,300
Hi-Temp/Slimline Tools**		0		300 450		300 450 <i>No SPARES</i>
Grand Total	36,500	1,500	38,000	37,742 37,892	1,858	39,600 39,750

*Micropaleontological Reference Centers

Summary of FY91 Special Operating Expenses

TAMU

1.	\$ 86,000	Publication: production of two additional volumes of <i>Proceedings</i>
2.	\$ 37,000	Computers
3.	\$ 450,000	Drilling Operations; replacement for exceptional high losses of supplies
4.	\$ 461,000	Engineering Developments: Diamond Coring System
5.	\$ 43,000 57,000	Scientific Equipment: CD-ROM for ODP database other equipment and projects
6.	\$ 382,000	Further development of Diamond Coring System
7.	\$ 86,000	Publication: two further volumes, additional to item 1 above
	\$1,602,000	TOTAL TAMU Special Operating Expenses

LDGO

8.	\$ 180,000	Hot temperature tools (dewarring, etc. of slimline tools donated by ARCO)
9.	\$ 46,000	Shipboard specialist for FMS processing
10.	\$ 30,000	CONOCO consortium fee requested by LDGO in base budget but allocated to SOE by BCOM
	\$ 256,000	TOTAL LDGO Special Operating Expenses

\$1,858,000

TOTAL Special Operating Expenses

(5% OF TAMU + LDGO TOTAL)

FY91 PROGRAM PLAN

BUDGET DISCUSSION

- DEVELOPMENT

	<u>\$M</u>
EXCOM PROJECTION (1988)	40.0
NSF TARGET (1/90)	39.3 + 0.3 (TECH.)
BCOM REC (3/90)	39.75
NSF REVISED TARGET (4/90)	39.6
PROGRAM PLAN (6/90)	39.6

- ADJUSTMENTS (pre-BCOM)

- DAY-RATE LOWER THAN PROJECTED (\$1M)
- JOI OVERHEAD ALLOCATION (\$400K)

- ADJUSTMENTS (post-BCOM)

- CUT SPARE TOOLS (\$150K)

- SPECIAL OPERATING EXPENSES (SOE)

- DEFINITION

- PERFORMANCE - improvements, e.g., hard rock drilling
- SECURITY - cover losses, build drilling supplies
- IMPACT - publications, P.R., dissemination of information

- OBJECTIVE: 4%

- FY91 PP: 5%

- HIGH TEMPERATURE TOOLS

- FEASIBILITY AND COST ESTIMATES IN CONJUNCTION WITH SANDIA
- OTHER SOURCES CONTACTED INFORMALLY
- PCOM ASKED FOR SOURCES
- UPON APPROVAL OF PROGRAM PLAN, FORMAL REQUEST TO PARTNERS

RFP

Processing Radiolarian Samples
for the Micropaleontological Reference Centers
Proposed length of work—Two years

5 proposals: 1 New Zealand
1 Japan
3 United States

Reviewers: Dr. Constance Sancetta, Lamont-Doherty Geological Observ., USA
Dr. André Schaaf, Université Claude Bernard Lyon, FRANCE
Dr. Tsunemasa Saito, Yamagata University, JAPAN
Dr. Ted Moore, University of Michigan, USA
Dr. John Saunders, Natural History Museum-Basel, SWITZERLAND
Dr. Brian Huber, Smithsonian Institution, USA

Reviews due to JOI: June 30, 1990

ODP Budget for FY1991: \$70,000 (~\$70K proposed for FY92)

NSF FY1991 CONGRESSIONAL BUDGET REQUEST

NSF

- Total Request is \$2.383 Billion
- Increase of \$304 Million or 14.6 % from FY1990
- Increase maintains Administration commitment to doubling the Foundation's budget
- Research and Related Activities increases by \$223 M or 13.5%
- Science and Engineering Education increases by \$48 M or 23.6%
- U.S. Antarctic Program increases by \$23 M or 15.1%

GEOSCIENCES (less Antarctic Program)

- Total Request is \$383.7 Million
- Increase of \$58.7 M or 18.1% from FY 1990
- Increases for

- Global Geosciences	39.8 M
- New research investigations and instrumentation	11.5 M
- New program in Arctic social sciences	1.0 M
- Science and Technology Centers	3.4 M
- Education and Human Resources Activities	3.0 M

NSF FY1991 CONGRESSIONAL BUDGET REQUEST

OCEAN SCIENCES

- Total Request is \$171.0 Million
- Increase of \$23.6 Million or 16.0 % over FY 1990
- Global Geosciences increase by \$19.2 M or 88.1%
- Other programs increase by \$4.4 M or 3.5%

OCEAN SCIENCES RESEARCH SUPPORT

- Increase of \$15.7 Million or 21.5% to \$88.6 M
- Focus on Global Change and new investigations
 - implementation of WOCE with hydrographic sections in Pacific, initiation of surface drifter program, and Atlantic process experiments
 - expansion of JGOFS with Pacific equatorial biogeochemical flux program
 - initiation of RIDGE field programs
 - participation in TOGA Coupled Ocean/Atmosphere Response Experiment
 - long lead-time instrumentation and model development for GLOBEC
 - increase number of awards to new and young investigators

NSF FY1991 CONGRESSIONAL BUDGET REQUEST

OCEANOGRAPHIC CENTERS AND FACILITIES

- Increase of \$5.0 Million or 11.7% to \$47.4 M
- Focus on facilities, field operations and technological requirements of Global Geosciences program
 - ship and technical support for Global Geosciences field programs funded by research programs
 - ocean technology support for ecosystems dynamics sampling systems and operations of accelerator mass spectrometry facility
 - upgrading of scientific support equipment in academic research fleet to meet global change research needs

OCEAN DRILLING PROGRAM

- Increase of \$3.0 Million or 9.4% to \$35.0 M
- Focus on operational costs, development of crustal drilling technology, and individual investigator support
 - measurement and sampling tools for high-temperature environments
 - experiments to measure crustal deformation and fluid flow in boreholes
 - high latitude field programs to define regional geologic framework for future drilling
 - support for analysis of geochemical and geophysical logging data

NSF Ocean Sciences Budget

	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>Change 87-91</u>
OSRS	66.5	67.2	70.9	72.9	88.6	33.2%
OCFS	37.2	37.2	43.6	42.5	47.4	27.4%
ODP	30.0	30.6	31.4	32.0	35.0	16.7%
	133.7	135.0	145.9	147.4	171.0	27.9%

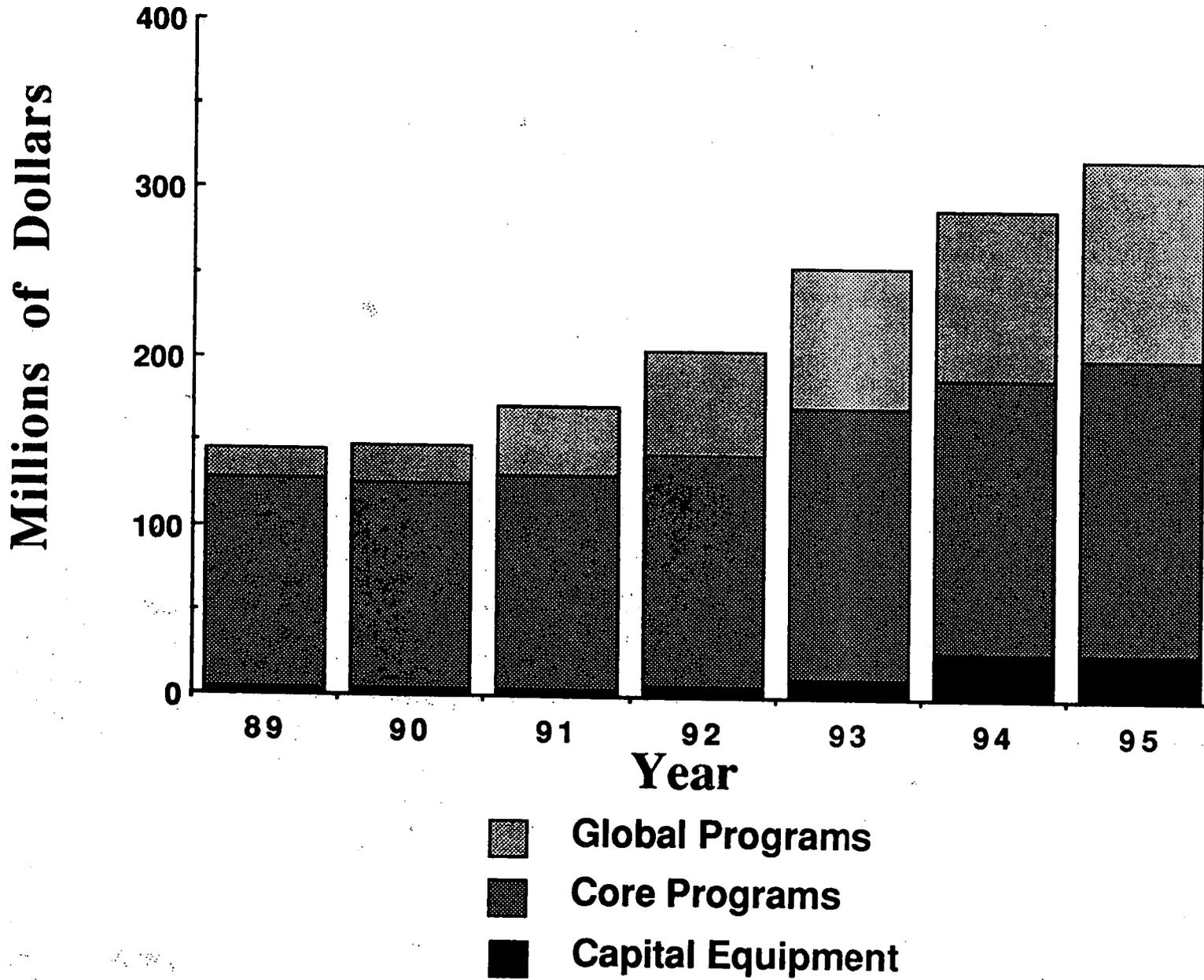
FY 1991 BUDGET INCREMENT

• Global Geosciences	\$19.2 M
• Disciplinary Base	\$1.4 M
• Ocean Drilling Program	\$3.0 M
	\$23.6 M

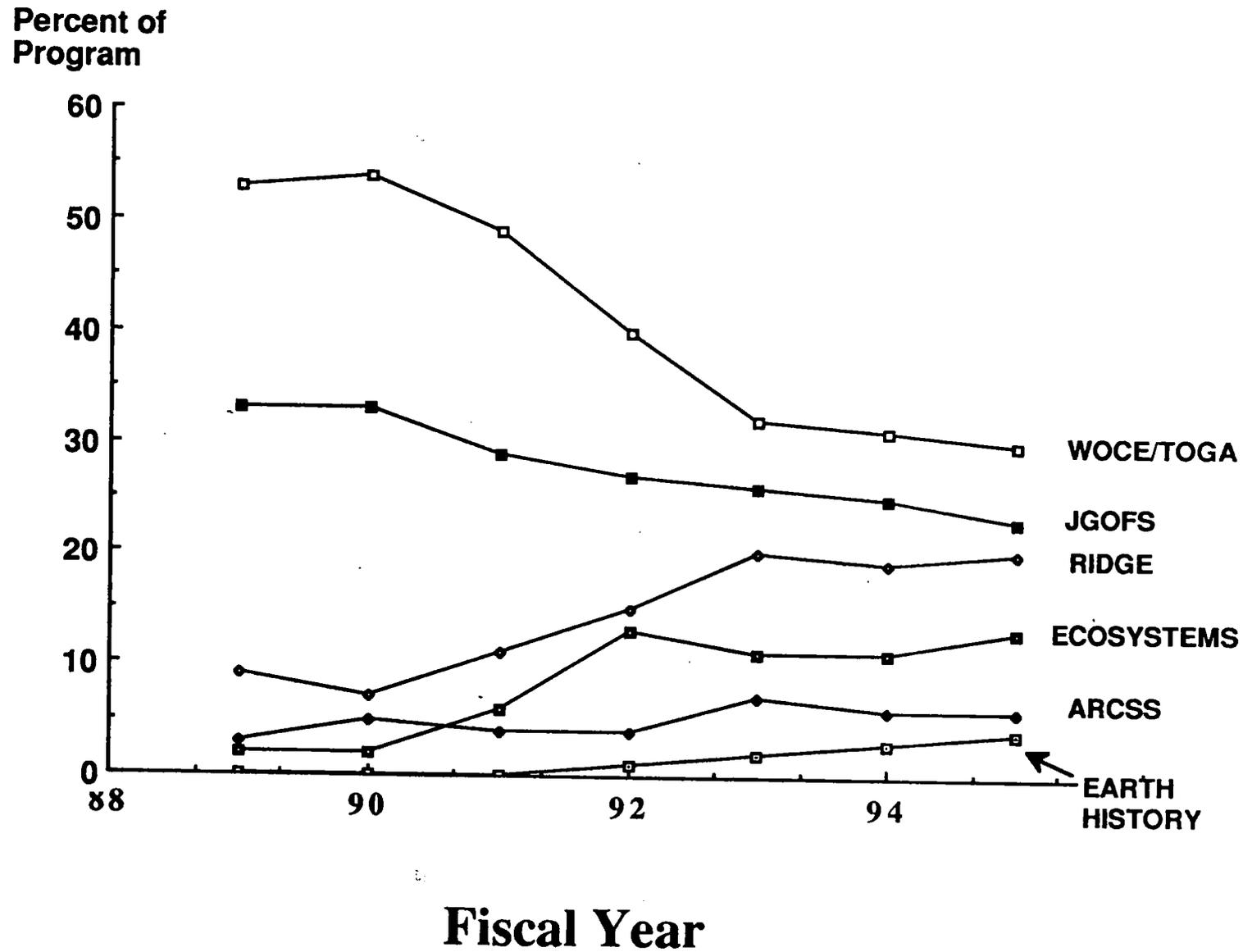
FY 1991 BUDGET PROFILE

Science	\$104.6 M
• Disciplinary Science	75.4
• Global Geosciences	29.2
• Education & Human Res.	(4.1)
Facilities	\$66.4 M
• Disciplinary Science	54.6
• Global Geosciences	11.8
• Capital Equipment	(3.3)

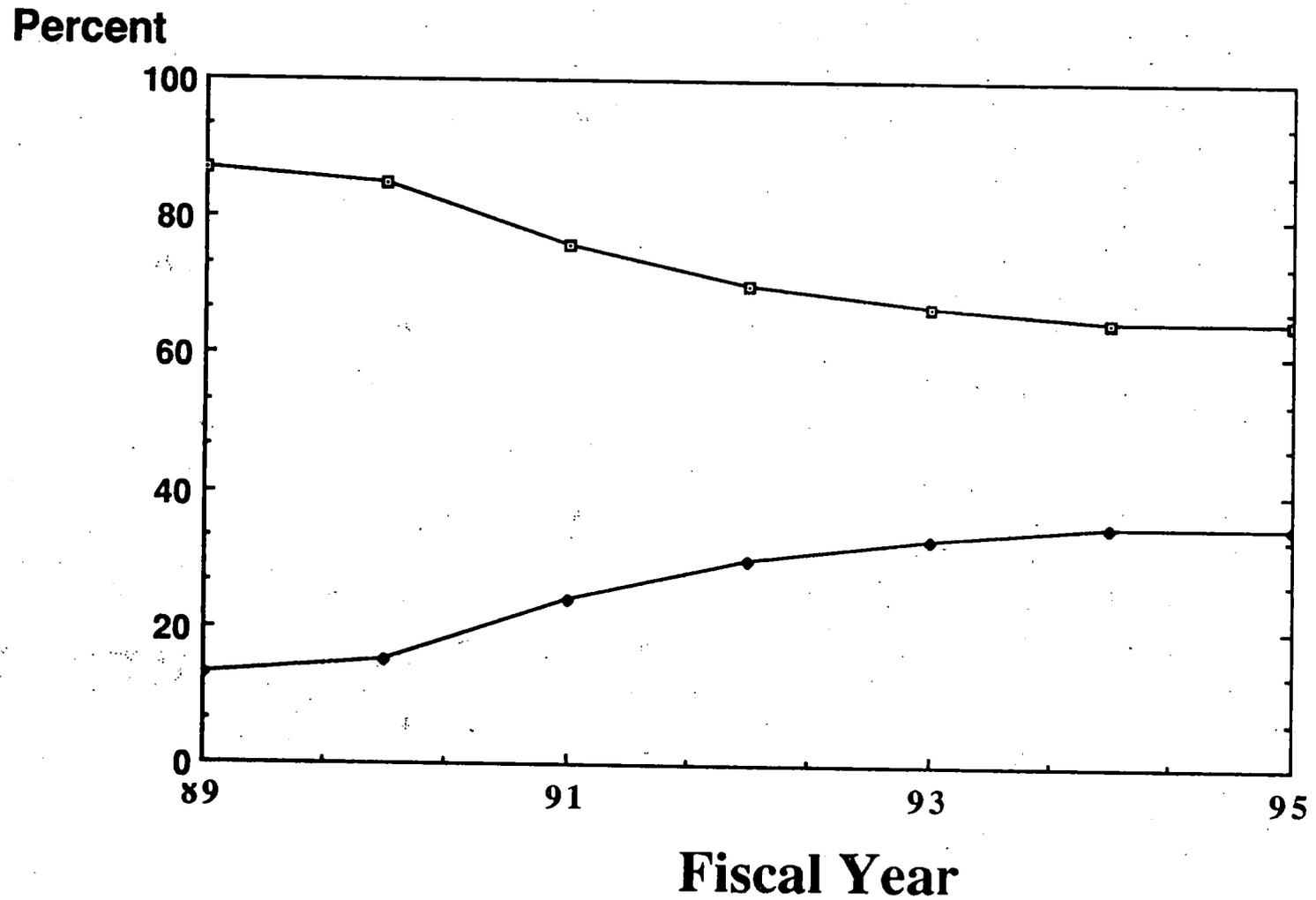
OCE Long-Range Plans (1989-95)



Global Geosciences Program Balance

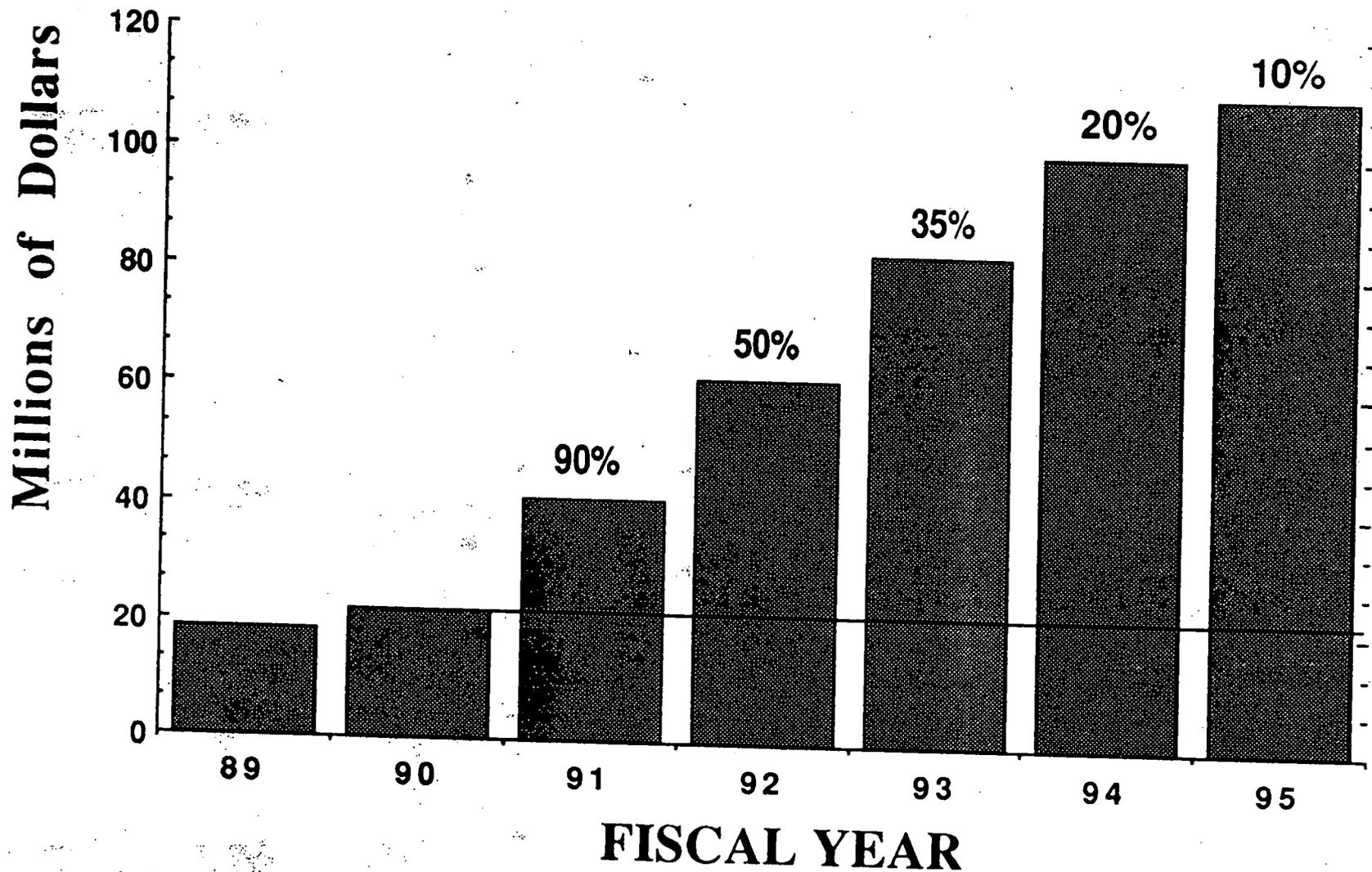


PROGRAM BALANCE

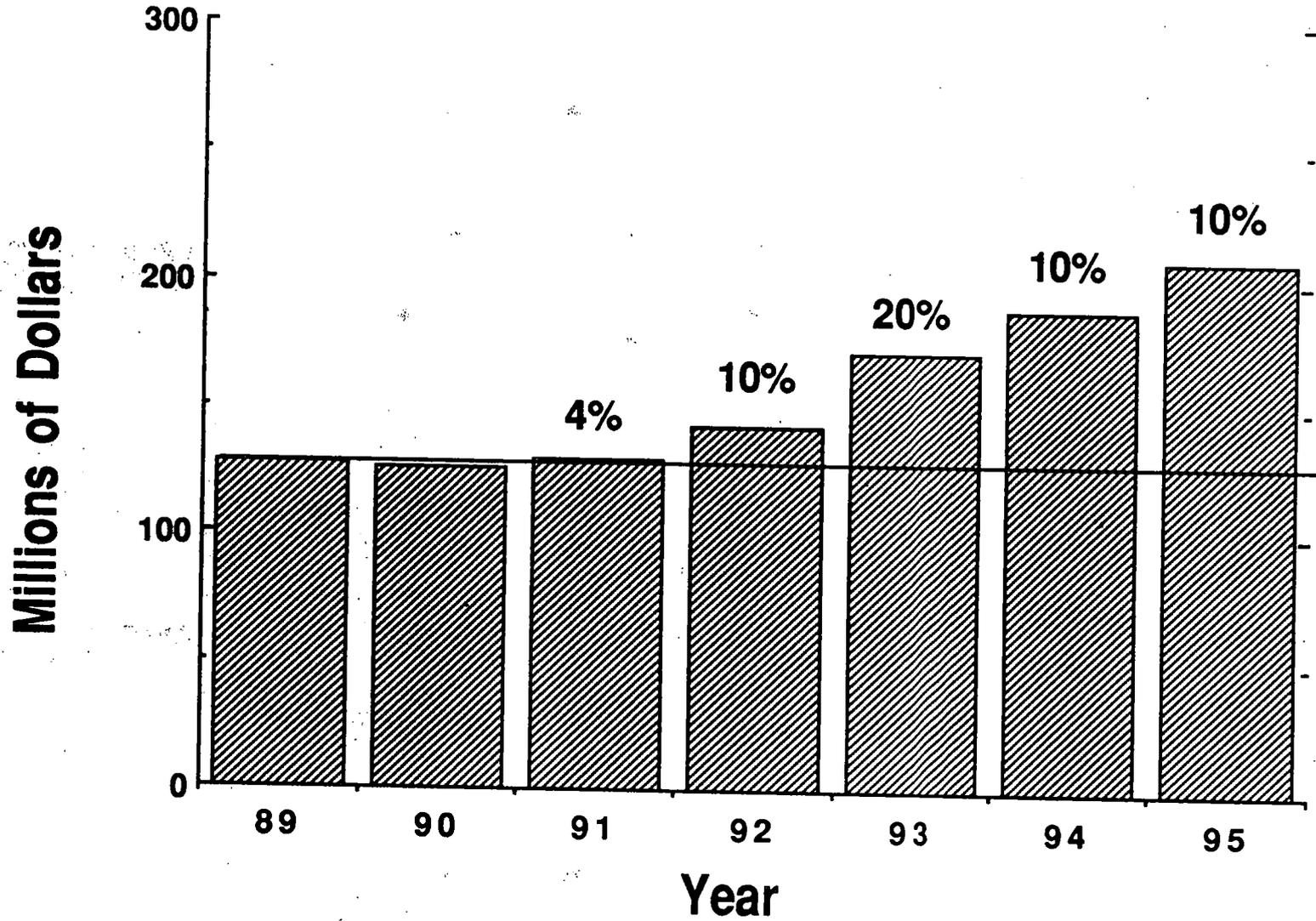


—□— % Core Programs
—●— % Global Geosciences

OCE Global Geoscience Projections 1990-1995



OCE Core Program Projections (1989-1995)



PROJECTIONS

	FY89	FY90	FY91	FY92
ACTUAL/NSF	36.150	38.0	39.6	40.0(?)
		(+ 5.1%)	(+ 4.2%)	(+ 1%)
EXCOM	—	—	40.0	42.0
			(+ 5.2%)	(+ 6%)

ODP FILM

- JOI is co-producing an hour-long film about the Ocean Drilling Program, to be seen on U.S. cable television and marketed internationally.
- The film will focus on ODP Leg 105 (Baffin Bay), relying primarily on footage taken by JOI/USSAC and supplemented with other film and graphics.
- JOI's co-producer, an award-winning firm in Ventura, California, plans to begin production in July, and expects a finished product by the end of the summer.
- U.S. broadcast is expected on the Arts and Entertainment Network or the National Geographic series in late 1990 or early 1991.
- JOI's co-producer will market the film internationally. Arrangements have already been made to provide a shortened version to the French magazine program "Ushuaia" on TF-1.
- JOI has retained control over the film's content, and is working closely with Leg 105 co-chiefs and TAMU to ensure a quality production.
- A shortened (5 to 10 min.) version will be produced for use at conferences, briefings, etc.
- JOI will have full noncommercial, nonbroadcast rights to all versions of the film, and will make copies available for loan throughout the ODP community and to others who are interested.

Questions? Contact Lee Stevens

NSF CONGRESSIONAL BUDGET

	1990 ACTUAL INCREASE	1991 REQUESTED INCREASE	
FOUNDATION TOTAL	8.3%	14.0%	
BIOLOGICAL/BEHAVIORAL SCI.	4.3%	11.6%	
COMPUTER/INFORMATION SCI.	11.9%	14.2%	
ENGINEERING	7.0%	13.0%	
MATHEMATICS/PHYSICAL SCI.	10.7%	11.4%	
EDUCATION	19.3%	23.0%	
ANTARCTIC PROGRAM	15.9%	15.2%	
GEOSCIENCES	5.2%	18.1%	(\$59M)
ATMOSPHERIC SCIENCES	6.1%	15.4%	(\$16M)
EARTH SCIENCES	11.1%	18.8%	(\$11M)
ARCTIC SCIENCES	22.0%	33.7%	(\$ 4M)
<u>OCEAN SCIENCES</u>	1.0%	16.0%	(\$24M)
Research Projects	2.8%	21.4%	(\$16M)
Centers/Facilities	- 3.0%	11.8%	(\$ 5M)
Ocean Drilling	- 0.4%	9.3%	(\$ 3M)

OCEAN SCIENCES DIVISION ACTUAL BUDGETS

	FY 1989	FY 1990	FY 1991?
OCEAN SCIENCES DIVISION	\$ 146.5M	\$ 147.4M	\$ 171.0M
Ocean Sciences Research	71.4M	72.9M	88.6M
Oceanographic Facilities	43.7M	42.5M	47.4M
Ocean Drilling Program	31.5M	32.0M	35.0M

FY 1990 NSF/ODP FUNDING

OPERATIONS AND MANAGEMENT	\$ 21,500,000
UNSOLICITED SCIENCE PROPOSALS	\$ 5,392,000
US SCIENCE SUPPORT/USSAC	\$ 4,008,000
OTHER NSF ACTIVITIES	<u>\$ 1,100,000</u>
TOTAL	\$ 32,000,000

FY 1990 NSF/ODP UNSOLICITED SCIENCE FUNDING

FIELD PROGRAMS

1. CARIACO TROUGH CORING AND SEISMICS	
Overpeck (LDGO) (with MGG)	81,433
Peterson (Miami) (" ")	38,797
Prell (Brown) (" ")	11,435
2. NEW JERSEY SHELF - MCS	
MILLER/MOUNTAIN (LDGO)	597,419
3. EAST PACIFIC RISE, 9 N.-REFRACTION	
PURDY (WHOI)	311,000
FRYER (HAWAII)	137,000
4. PACIFIC ANTARCTIC MARGIN - MCS	
Dalziel (Texas) (with DPP/Britain)	100,000
Hayes (LDGO) (" ")	72,058
5. VEMA TRANSFORM - DEEP-TOW	
Delaney (Washington) (with France)	407,272
Karson (Duke) (" ")	92,873
6. Shiptime for above	980,310
	<u>TOTAL---2,829,597</u>

DATA ANALYSIS FROM PREVIOUS FIELD PROGRAMS

Winterer (Scripps)	50,000
Stoffa (Texas)	117,454
Zehnder (LDGO)	189,621
Fornari (LDGO)	27,461
Pisias (Oregon State)	132,309
Bender (North Carolina)	21,560
Thunnel (South Carolina)	60,000
	<u>TOTAL--- 598,405</u>

DOWNHOLE INSTRUMENTATION AND DATA ANALYSIS

Gieskes (Scripps) (with France)	78,844
Becker (Miami) (" ")	27,030
Stephen (WHOI)	55,899
Burns (WHOI)	74,112
Becker (Miami) (with Canada)	158,582
Carson (Lehigh) (" ")	48,215
Herbert (Scripps)	60,000
	<u>TOTAL--- 502,682</u>

ODP RELATED SCIENCE

11 SEPARATE AWARDS	<u>TOTAL--- 619,487</u>
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MISCELLANEOUS

LABORATORY/FIELD EQUIPMENT	
5 SEPARATE AWARDS	507,677
Ginsburg (Miami)-Bahamas Drilling	75,000
Friedman (TAMU)-ODP:DOSSEC Engineer	120,000
OTHER	139,043
	<u>TOTAL--- 841,829</u>

PROGRAM TOTAL -- 5,392,000

OTHER ITEMS

US RESEARCH SHIPS

- * M/V BERNIER HAS BEEN RENAMED RV EWING AND HAS COMPLETED SHIPYARD OVERHAUL. KRUPP-ATLAS MULTIBEAM SONAR AND LAMONT'S DIGITAL SEISMIC SYSTEM HAVE BEEN INSTALLED. SHIP SHOULD COMPLETE ITS SEA-TRIALS IN NEAR FUTURE AND BEGIN 1990 SCHEDULE.
- * RV KNORR IS STILL IN SHIPYARD UNDERGOING 30 FOOT STRETCH AND RE-ENGINEING. SHOULD LEAVE YARD IN DECEMBER. RV MELVILLE IS IN YARD UNDERGOING SIMILAR REFIT AND SHOULD BE BACK IN SERVICE IN APRIL, 1991.
- * CONSTRUCTION OF NEW VESSEL FOR UNIVERSITY OF WASHINGTON (TO BE NAMED THOMPSON) IS PROGRESSING AND SHIP SHOULD BE IN OPERATION IN MID-1991.
- * DIVISION OF POLAR PROGRAMS HAS LET CONTRACT FOR 300 FOOT ANTARCTIC RESEARCH VESSEL WITH ICE-BREAKING CAPABILITY. SHIP WILL BE BUILT IN LOUISIANA AND SHOULD BE IN OPERATION IN EARLY 1992.

US ACADEMIC CONTINENTAL DRILLING PROGRAM (DOSECC)

- * DOSECC OFFICE HAS BEEN RELOCATED TO TEXAS A&M UNIVERSITY. A DRILLING ENGINEER HAS BEEN HIRED WHO WILL DIVIDE HIS TIME BETWEEN ODP AND DOSECC ACTIVITIES.

DSDP ACTIVITIES

- * INDEX FOR DSDP VOLUMES IS IN FINAL STAGES OF COMPLETION. INDEX WILL BE PUBLISHED IN HARD COPY WITH A COMPUTER SEARCHABLE CD-ROM. DISTRIBUTION WILL FOLLOW EXISTING ODP GUIDELINES.

ADDITIONAL ODP MEMBERS

- * POSSIBILITY OF SOVIET MEMBERSHIP IS BEING EXAMINED BY U.S. GOVERNMENT.

Site Survey Augmentation

Status: January - May 1990

Proposals received:

(* Funded, + Pending)

- * **Bobb Carson (Lehigh): A Proposal to Analyze GLORIA Side Scan Imagery to Define Locations of Fluid Expulsion on the Oregon Accretionary Complex. (\$24,178)**
- * **Frederick Duennebier (HIG): Surveying and Sampling for Lo-En and Ratak Guyots of the Marshall Islands. (\$99,448)**
- * **Kathryn Gillis (WHOI): Hydrothermal Alteration of a Crustal Section Exposed in the Hess Deep. (\$12,068)**
- * **Sandy Shor (HIG): Surveying Very Young Lava Flows on Reykjanes Ridge. (\$18,444 — CY5 funds)**
- * **Steve Cande (LDGO): Pre-Stack Depth Migration of Seismic Lines Intersecting Proposed Drill Site of the Chile Margin—Chile Ridge Collision Zone (\$11,775)**
- + **J. Casey Moore (U.C. Santa Cruz): Heat Flow Measurements and Vent Characterization: Evaluating the Fluid Regime of the Oregon Margin in Preparation for ODP Drilling. (\$24,764)**
- + **James Hawkins (SIO): Lau Basin Crustal Fabric: Continuation of Synthesis of Seabeam and Magnetic Data Near Proposed ODP Sites LG9, 10 on Leg135.**

Other JOI/USSSP Programs

Wireline Reentry Proposal received:

- + Fred Spiess (SIO): Development and Operation of a Wireline Reentry System: Phase B Construction (\$877,067)

Logging Schools:

- June 2, 1990 (AAPG/SEPM, San Francisco, CA). Twenty-four persons attended the course which was instructed by the Borehole Research Group at LDGO.

Graduate Fellowships

- Awarded in CY6 to date:
 - Julia Morgan (Cornell)
 - Teresa Hagelberg (Oregon State)
 - Steven Hovan (University of Michigan)

DSDP CD-ROM Data Set

- Over 350 data sets distributed so far
- Macintosh accession software development continuing at NGDC

Contract Year 7-9 Program Plan

- Draft due at NSF on August 1, 1990
- NSF panel review in the fall
- Review by NSB in February 1991

New Programs to be proposed

- Emphasis on education
 - JOI/USSSAC Distinguished Lecture Series
 - Summer research for undergraduates

Workshops

Status: January - June 1990

Proposals received:

(* Funded, + Pending)

- * Michael Purdy (WHOI): The Physical Properties of Uppermost Igneous Ocean Crust. (\$10,000 CY5 funds)
- * Warren Prell (Brown): Evolution of Upwelling Systems Since the Miocene: A Symposium to Integrate Existing Drilling Results. (\$39,965)
- * Lowell Stott (USC): A Paleogene Paleoceanography Workshop. (\$40,753)
- * Michael Arthur (URI): Travel Support for Participants in Cretaceous Resources, Events, and Rhythms Research Symposium (Co-Sponsored by SEPM and GSGP/CRER). (\$14,465)
- + Robert Duncan (OSU): Proposal for a USSAC-sponsored Workshop and Publication to Synthesize ODP Results from the Nine-Leg Indian Ocean Program (\$47,726)
- + Mike Coffin (UTIG): Large Igneous Provinces: A Workshop to Develop Scientific Drilling Initiatives on Volcanic Margins, Ocean Plateaus, and Seamount Chains. (\$48,322)
- + James Kennett (UCSB) and John Barron (USGS): The role of the Southern Ocean and Antarctica in Global Change: An Ocean Drilling Perspective