JOIDES PLANNING COMMITTEE SPRING MEETING
24-26 April 1990
Société Géologique de France
Paris, France

MINUTES

Members:

J. Austin - University of Texas at Austin
G. Brass - University of Miami
M. Cita-Sironi - Universita d'Milano, ESF Consortium
D. Cowan - University of Washington
R. Duncan - Oregon State University
H. Jenkyns - Oxford University, United Kingdom
Y. Lancelot - Université Pierre et Marie Curie, France
M. Langseth - Lamont-Doherty Geological Observatory
M. Leinen - University of Rhode Island
J. Malpas - Memorial University, Canada-Australia Consortium
R. Moberly (Chairman) - Hawaii Institute of Geophysics
J. Natland - Scripps Institution of Oceanography
K. Suyehiro - Ocean Research Institute, Japan (alternate for A. Taira)
B. Tucholke - Woods Hole Oceanographic Institution
U. von Rad - BGR, Federal Republic of Germany
J. Watkins - Texas A&M University

Liaisons:

L. Garrison - Science Operator (ODP-TAMU)
R. Jarrard - Wireline Logging Services (ODP-LDGO)
E. Kappel - Joint Oceanographic Institutions, Inc. (alt. for T. Pyle)
B. Malfait - National Science Foundation

Guests and Observers:

J. Backman - University of Stockholm, Sweden
P. Blum - Future Executive Assistant and Non-US Liaison in JOIDES Office
M. Cheminee - Université Pierre et Marie Curie, France
A. Crawford - University of Tasmania, Australia
A. Meyer - Science Operator (ODP-TAMU)
K. Pisciotto - British Petroleum Exploration, UK
C. Sparks - Institut Français du Petrole
M. Storms - ODP-TAMU Engineering

JOIDES Planning Office:

H. Iwamura - Secretary
L. d'Ozouville - Executive Assistant and Non-US Liaison
G. Waggoner - Science Coordinator

Tuesday, 24 April 1990

833 Introduction

PCOM Chairman Ralph Moberly called the 1990 Spring Meeting of the JOIDES Planning Committee to order. Yves Lancelot welcomed everyone to Paris. Lancelot explained logistics including a reception at the Université Pierre et Marie Curie. Moberly welcomed new PCOM member Jim Natland and PCOM alternate Kiyoshi Suyehiro standing-in for A. Taira. Introductions were then made around the table.

834 Minutes of 27-30 November 1989 Annual PCOM Meeting

Moberly called for comments, corrections and approval of the previous minutes. There were no further corrections to the draft minutes.

PCOM Motion

PCOM approves the minutes of the 27-30 November 1989 Planning Committee meeting. (Motion Brass, second Natland)
Vote: for 15; against 0; abstain 0; absent 1

835 Approval of Agenda

Moberly called for additions or revisions, and then for adoption of the agenda for the meeting. Several minor additions and modifications were requested in the Agenda.

PCOM Motion

PCOM adopts the agenda for the 24-26 April 1990 Planning Committee meeting with amendments. (Motion Tucholke, second Brass)
Vote: for 15; against 0; abstain 0; absent 1

836 ODP Reports By Liaisons to PCOM

EXCOM

EXCOM has not met since the last PCOM meeting in November. R. Moberly reported that Peter Blum will be the next non-US Liaison, in the JOIDES Office at the University of Texas at Austin.

NSF

B. Malfait reported that the 1990 budget was announced in mid-January. Overall, NSF received an 8% increase with the biggest increase going to Education. The Antarctic program also had a major increase, in part for a new icebreaking research vessel. Geoscience programs had a 5% increase overall, with most going to Earth Sciences. Ocean sciences had a 1% increase and Ocean Drilling got about a 2% increase. Global change programs such as WOCE, JGOFS, and RIDGE got most of the increase. Overall, shipboard support is down. Looking ahead to 1991, Geosciences is requesting an 18% increase mainly for Global Change Programs. The request for Ocean Sciences is around 16% and includes a 9% increase for Ocean Drilling.

The FY90 budget for Ocean Drilling was approved in late December at $38M, with $21.5M from NSF and $16.5M from the international partners. The FY91 budget had a target of $39.3M with a supplement of $0.3M for additional new technology. There has been a reduction of the administrative costs charged by JOI to ODP. After administrative review of the 1991 draft plan, NSF has advised JOI of a final target of $39.6M for the 1991 budget.

US ODP Science Program news items included: there has been an increase in proposals for downhole instrumentation for both the *JOIDES Resolution* and by wire-line reentry; a shallow-water drilling program in the Bahamas with Bob Ginsburg as PI is being jointly supported by Ocean Sciences and MG&G programs; NSF ODP Field Programs that are upcoming are: near-bottom refraction of the EPR around 9°N by Purdy, MCS study of US East Coast margin by Miller, Christie-Blick and Mountain in May 1990 on the *Ewing*, MCS study of the Antarctic peninsula by Dalziel/Austin/Shipley (UTIG) and Hayes/Mutter (LDGO) scheduled for January 1991 on the *Ewing*, Deep-tow study of the Kane Transform by Delaney and Spiess scheduled for early in 1991 on the *Melville* in a joint project with French scientists.

Other items discussed were: the possibility of Soviet participation is being re-examined by the US administration; in March the National Science Board got a briefing on the status and scientific results of ODP; the US Continental Drilling Office (DOSECC) has moved to Texas A&M and joint funds will be used to support an engineer working for both ODP-TAMU and DOSECC; an Index to DSDP volumes is in the final stages of preparation and will most likely be published in hard copy with an accompanying CD-ROM; two positions in the NSF Ocean Drilling program are going to be advertised.

Discussion

Cowan asked what percentage of proposals for field programs are getting funded. Malfait said that less than 50% get funding. Moberly said that any percentage near 50 is an improvement over the previous level of around 24% funding.

von Rad wanted to know what other responses had been received on USSR participation besides the one from the Science Advisor to the President. Malfait said that there have been expressions of concern over USSR participation by some other segments of the government related to technology transfer.

JOI

E. Kappel discussed the status of the FY91 program plan and budget after the BCOM meeting in March. The target budget of $39.3M is less than the $40M predicted in the 4-year program plan as necessary to continue technology development. Continued development has been possible due to fortunate circumstances, including constant day-rates, which have saved about $1M,

and reduction of indirect costs at JOI by around $400K. BCOM had suggested that an additional $450K be requested for cooperation with Sandia to develop and build two sets of high-temperature slimline tools JOI is interested in knowing if other groups could compete with Sandia to supply these slimline tools in time for the upcoming drilling legs. A second set of tools does not appear to be possible in next year's budget. The Micro-paleontological Reference Center bids are due at the JOI Office and it appears that it will require about $70K per year for two years. Special Operating Expenses in the FY91 budget (Appendix A) include: $843K for continued development of the Diamond Coring System; $172K for publication of 4 additional *Proceedings* volumes; $450K for replacement of exceptionally high losses of drilling supplies; $180K for dewarring of slimline tools donated by ARCO; $46K for shipboard FMS processing; $30 K for CONOCO consortium fee; plus some miscellaneous other equipment purchases.

Actions related to ODP renewal efforts have included: well-received presentations by R. Corell, J. Baker, W. Ruddiman, P. Fryer, P. Worthington and N. Pisias to the National Science Board; Long Range Plan has been sent to the printer and the complete portfolio will be available by the June EXCOM meeting. 3000 copies of the LRP will be printed and will get distributed to JOIDES Journal recipients and 100 copies to each ODP Office of the non-US partners. The portfolio will consist of the LRP, a layperson brochure and additional space for a member-country brochure.

Coordination with other International Geoscience Programs is progressing. PCOM has formally named JOIDES members to the GSGP Liaison Group and provisionally to FDSN. A positive response has been received from the Nansen Arctic Drilling Program. Discussions have begun with: InterRIDGE which will have an international meeting in Brest on 12-14 June; International Geosphere/Biosphere Program; US Continental Scientific Drilling Program, FRG KTB; Italy ENEL/UNG. More effort is needed with such other continental drilling and geothermal programs as Geol. Prof. de la France, UK Geothermal-hot dry rock, Japan, USSR, Sweden etc. PCOM needs to consider drilling holes in cooperation with these other programs; the pilot hole north of Oahu for FDSN would show a strong commitment to this kind of cooperation which will strengthen ODP.

Discussion

Leinen asked why no letter had been written to the International JGOFS Office. JGOFS is very interested in cooperation in the Eastern Equatorial Pacific Neogene Transect Leg. Kappel said that JOI would write JGOFS.

Cita agreed that PCOM needs to give a high priority to cooperation and make a commitment to drill a hole such as the Oahu pilot hole.

Tucholke said that he is concerned that there was no competition for the funds for the high-temperature slimline tools. Garrison said that the problem was the limited period of time before the tools are needed; there was the need for a supplier that could provide instruments in a timely fashion. Moberly said that Sandia has invested a lot of money in developing high-temperature logging tools, allowing for a quick response. Malfait said that because co-mingled funds are being used, the competition should be open to the international partners. Kappel said that JOI is aware that there should be both open competition and international competition for these funds, but to issue an RFP would take time and the drilling is coming up very soon. Kappel asked if any PCOM member and especially the non-US partners know of someone who could provide the high-temperature slimline tools in a timely fashion; if so, they should let JOI know.

Science Operator

L. Garrison reported on the current drilling on Leg 131 at the Nankai Trough. At Site 808 (NKT-2) the predicted turbidites were encountered during drilling. The A-hole was drilled to 112 mbsf but the pipe became stuck and after packing off the BHA was lost at 83 mbsf. The B-hole was XCB cored to 359 mbsf and before the RCB change-over it was decided to log the hole. During the logging operations, logging tools including a radioactive source were lost. For the C-hole, the drill-in casing system developed for Leg 110 was tried and the hole was cased from 14 to 105 mbsf. Further drilling with the RCB is approaching the décollement at about 1000 mbsf. Bad weather and strong currents have hampered operations at this site. The LAST tool has not worked well.

A. Meyer reported on Leg 130 on the Ontong Java Plateau. This was a very successful leg, with 4822 m of core recovered from 5 sites. In the Neogene transect, OJP-6 was substituted for OJP-3 based on the results of drilling at the previous site (803, OJP-4). Drilling at Sites 803 and 807 recovered basement, with about 150 m recovered at 807. There was a successful airdrop of the multi-shot orientation device that was flown from Ponape.

J. Backman commented that a textbook stratigraphy was recovered, which included K/T boundaries at two sites. Some shipboard scientists were uneasy by what were viewed as two competing programs. Cita said that based on the results, the decisions made onboard appear to have been good. The leg was clearly successful as a multiple objective leg which has provided abundant core for everyone to study. Leinen said that any problems caused by arguments over the objectives of the leg were the results of PCOM decisions and PCOM needs to be more careful in defining these objectives in the future.

L. Garrison next presented some minor changes in the ODP Operations Schedule (Appendix B). The port for the end of the NE Australia Leg and the beginning of Vanuatu Leg is now Townsville rather than Brisbane and the

dates are 11-15 October. The Vanuatu Leg has had 6 days added as a result of Safety Panel considerations, and is now 62 days long. The port dates in Suva have been changed to 17-21 December.

A. Meyer discussed the staffing of legs. Co-Chief Scientists have been named for Sedimented Ridges 1 (E. Davis and M. Mottl) and for Eastern Equatorial Pacific Neogene Transect (L. Mayer and N. Pisias). Staffing is almost complete for Legs 133-135 with the exception of some non-US partners. Leg 137 and 138 will be staffed in June. Meyer presented the tally of shipboard participants through Leg 130 (Appendix B).

Since the November PCOM meeting, 7 *Proceedings* volumes have been published (Appendix B). The "Scientific Results" through Leg 107 are out and by the end of FY90, the "Scientific Results" through Leg 116 and "Initial Reports" through Leg 128 are expected to be published. It is now taking from 37-40 months post-cruise for the "Scientific Results" to appear and this should decrease to 33 months post-cruise by next year (Appendix B). The initial meeting at 3-4 months post-cruise of the essential part of the shipboard party for Legs 125-128 has worked well. The first 12-month post-cruise meeting will be for Leg 125 around the end of May.

Malfait asked what the optimum number of persons was for the initial meeting at 3-4 months post-cruise. Meyer said that the Co-Chief Review Meeting suggested that one from each critical discipline is needed, so that means 7-8 persons. Austin asked if this meeting had to be held at TAMU. Meyer said that TAMU is where the information needed for the "Initial Reports" is most readily available and therefore the meeting should be held there.

Duncan asked if the problems with publications illustrated by the letter from W. Prell in the Agenda Book were representative. Meyer said that it was typical of the problems caused by lack of communication and the necessity to set deadlines before getting a response from individuals. A compromise deadline has now been set for May which should allow the manuscripts to get finished. Duncan asked if many synthesis papers get delayed because of the slow submission of other manuscripts. Meyer said that under the new system of meetings, draft manuscripts should be brought to the post-cruise meeting and the Co-Chiefs can begin writing their synthesis papers based on these drafts.

Meyer distributed the recommendations from the Fifth Annual Co-Chief Scientists' Review Meeting (Appendix C) held in March and emphasized items of concerns for PCOM. Meyer said that there were two recommendations about Science Operations which are related to PCOM: better scientific justification for logging recommendations by DMP; and liaisons from relevant thematic panels to the pre-cruise meeting. Recommendations about scientific equipment and procedures included two

workshops, one of paleomagnetists and the other of physical properties specialists, to make suggestions for improvements in shipboard facilities. There is also a recommendation that the multi-shot orientation tool be run in all APC holes for reversal stratigraphies. Under curation recommendations, the Co-Chiefs suggested that the master sampling report produced at the end of the cruise be augmented to include information about what scientific studies will be done and what must be completed to fulfil cruise obligations. Publications recommendations include one that the initial post-cruise meeting should include at least one person from each discipline "critical" to the cruise objectives.

Brass was concerned that having only liaisons from the relevant thematic panels might lead to confusion over the priorities of various objectives; PCOM should be balancing the objectives from the various panels and integrating them into multiple-objective legs. Meyer said that the Co-Chiefs said that they would like to have a better knowledge of the background for the leg priorities, this could come from PCOM or its representatives. Lancelot said that PCOM as a body does not generally look at proposals and therefore it would be better to have the experts giving advice at the pre-cruise meeting. This is especially true since the cruise prospectus is being used as a legalistic document and requires details about cruise objectives. Brass said that members of PCOM, especially watchdogs, do read the proposals and minutes of thematic panel meetings. PCOM synthesizes the information and balances the various objectives on multiple-objective legs. Natland said that from experience as a former WPAC member, regional panels integrate information when preparing their prospectus. Austin said that as recommendation #5 states, invite proponents to be Co-Chiefs, if this is not done someone needs to distill the minutes. Moberly reminded PCOM that the Science Plan, approved at the Annual Meeting and written by the JOIDES Office, is a distillation of science advice from panels and PCOM.

Austin agreed with recommendation #3 that wider and more timely distribution of short summaries of upcoming legs is needed; these should appear as soon as possible after PCOM schedules the legs. Leinen suggested that this be taken up with AGU for publication as a periodic information item in EOS, as is done for some other programs. von Rad said that a one-page summary would be helpful for keeping a wider community informed. Brass and Cowan agreed that this was an important item. Meyer said that in terms of staffing of a leg, this information needs to be out about 12 months in advance of the leg.

Lancelot said that as a recent Co-Chief, he thought that the paleomagnetist workshop was an important item for consideration. Moberly said that the easiest way to handle this item is to invite some appropriate guests to a SMP meeting and to have some time put aside for discussing the problems and possible solutions.

Langseth said that he was concerned about the statement regarding DMP needing further scientific justification for their logging recommendations. Further discussion on items from the Co-Chief meeting was deferred until the reports of the panel meetings.

Meyer reported that since funds have been made available, the production of a CD-ROM containing ODP data is now underway. NGDC will be developing the software, which is the most expensive part of the process, for producing the ODP CD-ROM. The plans are to take a "snapshot" of the ODP data at the time of production of the master, later "snapshots" will be used to remaster the CD-ROM as more data accumulates. Lancelot asked when the CD-ROM that is accessible by the Macs will be ready. Kappel said that this is still at least 5 months down the road. Meyer said that the ODP CD-ROM should be Mac accessible.

The West Coast Repository at Scripps is being relocated to a new building, so that ODP cores will now be housed in one location. Based on an IHP recommendation, Job Descriptions are now mailed with the letters of invitation, which spell out the time requirements and duties of the particular position.

Austin asked if there was any attempts being made to keep the size of the science party down. Meyer said that this was being attempted.

Wireline Logging Services

R. Jarrard presented the Wireline Logging Services report for the Lamont Borehole Research Group. He discussed logging results from Legs 129 and 130 (Appendix D). Leg 129 had only modest logging plans to begin with and problems with the logging cable resulted in even less logging than anticipated. The seismometer experiment on Leg 128 used several kilometers of cable which was to be replaced, however, due to problems with the Japanese Export Agency, the cable was not allowed to go onboard the *Resolution*. This resulted in a splice at the end of the cable and the inability to use the SES. After a tool got stuck and the cutter and crimper misfired near the middle of the cable, the likelihood of successful further logging with that cable decreased significantly. Therefore the lower interval of Hole 801C could not be confidently logged and the decision not to log was made in consultation with the Schlumberger logging engineer, BRG, PCOM Chairman and the Science Operator. The new logging cable did arrive for Leg 130 and logging was efficient on this leg. Post-cruise processing of the logging data has revealed identifiable Milankovich cycles in Leg 129 and Leg 130 records, which can be used for sedimentation rate studies (Appendix D). One of the primary logging objectives on Leg 130 was to help with correlation between Sites 586 and 806 and the logging is complete enough to allow compilation into a continuous stack (Appendix D). The FMS data in the basement allows identification of pillows and will allow core orientation. Processed FMS data

from Leg 126 has been used to orient cores and identify rotation of the Philippine Plate using the dip direction (Appendix D).

On Leg 131 at Nankai, a $200K tool string was lost when the drillstring was inadvertently lowered onto the tool string due to a communications problem between the driller and the logging winch operator. An entanglement of lines above the blocks, necessitated lowering the drillstring, but the driller failed to alert the winch operator. There may be some problem with backup supplies due to loss of the swivel. BRG is looking into a resupply by a small boat. The wireline packer was modified up to the last minute, but was ready for use on the leg in either perforated casing or in the open hole. The wireline packer can be used in the open hole only if the caving rate is low, otherwise there is the danger that too much material will pile up on the tool and get it stuck.

Looking ahead to milestones expected for downhole measurements over the next 12 months: the wireline packer will probably be used on the Nankai and NE Australia legs; some slimhole logging techniques will be tested on the Engineering 2 leg, the new SES will be used on the NE Australia leg, which will also include shipboard FMS processing; the German digital televiewer will be used on the Vanuatu leg as well as a trial of the French magnetic-reversal stratigraphy tool; the Sandia high temperature and fluids tool will be tested on Engineering 3; cooling by circulation will be tested on the Sedimented Ridges leg.

Discussion

Brass asked if the Custer temperature tool had been considered. Langseth said that temperatures would have to be less than 350°C for that tool. Garrison said that Sandia will be lending both a memory tool and an active temperature tool. Tucholke asked if the fluid sampler was from Sandia or Los Alamos. Jarrard said it was Los Alamos. Langseth asked if there would be a seal for the holes. Storms said that ODP would have a basic seal ready to be deployed, but it may not have the sensor package.

Langseth asked if there was a better hope of success at Cascadia for the geotechnical tools that were anticipated to work on the Nankai leg. Jarrard said that one problem was that technology development took longer than anticipated and the other was hole conditions at Nankai have been worse than expected. Lancelot said that the problems caused by sands at Nankai were not unexpected and the leg was planned knowing that this could cause problems. Brass echoed this and said the leg was proceeding as planned. Langseth said that PCOM should be more realistic about tool development. Moberly said that PCOM discussed the risks and both took some advice and ignored other advice from panels; the decision was to stay at the edge of technology development in order to advance the program. Leinen agreed that being at the edge of technology was needed, but the ability to drill and

maintain a hole in the expected sand-rich environment was not adequately addressed during the planning of the leg. Garrison said that the use of the drill-in casing was successful in establishing a hole and some geotechnical measurements can be made with the wireline packer and LAST tool.

837 Reports By PCOM Liaisons

LITHP

Liaison R. Duncan reported on the 5-7 March 1990 meeting of LITHP, which was held jointly with TECP. An important question that arose during the ranking of programs was, what constitutes a proposal for consideration in the 4-year plan, since there is a range from letters to fully mature and developed proposals. LITHP decided that in their rankings all proposals within a theme would be considered as potential programs. LITHP spent considerable time discussing Engineering 3 at 504B and the EPR. At 504B, LITHP recommends a 3-day logging program before the attempt to clean the hole by fishing and milling. If the hole is cleaned, LITHP recommends that it be deepened as much as possible with the remaining time and therefore a small scientific staff be onboard the *Resolution*. At the EPR, LITHP recommends that two sites be established with about 50 m of basement penetration and that a modest science party be on hand.

During the joint session, deep drilling was discussed and LITHP recommended the establishment of a task force to consider how best to approach drilling deep holes in oceanic environments, since it does not appear to be feasible to drill a hole deeper than 1.5 to 2 km at this time. ODP could help sow the seeds for a future deep drilling program. LITHP along with TECP recommended the formation of a Volcanic Margins Working Group and suggested a slate of names for consideration. The lack of combining petrologic and tectonic objectives during zero-age crust drilling was jointly discussed and there will be efforts to combine the two in future drilling programs. During the joint session there was a presentation by M. Purdy about the Ocean Bottom Seismic Station pilot hole north of Oahu and both LITHP and TECP endorsed drilling this hole.

Discussion

Natland said that Susan Humphris has been unanimously nominated to be the next LITHP chairman.

von Rad asked why LITHP recommended that the Lau Basin Working Group be asked to look at the proposal for drilling ore deposits in the back-arc since the Working Group no longer exists. Natland said that LITHP thought that the proposal deserved consideration as a back-up site. Further discussion was deferred until Minute 850.

OHP

Liaison G. Brass reported on the 29-31 March 1990 meeting of OHP, which spent most of its time reviewing proposals and ranking programs. OHP discussed the present publication targets and the impact on synthesis chapters and content of the volumes. OHP generally endorsed the schedule with several concerns about about delays caused by the editorial process and getting important data included in the volumes. OHP also spent time discussing the addition of personnel to the panel. OHP expressed concerns about the ability to recover organic-rich sediments on the continental margins that are important for paleo-productivity studies but which may be excluded from drilling by safety considerations.

Discussion

Garrison asked about the importance of the organic rich sediment drilling. Brass said that it is very important for understanding the carbon cycle and will probably require drilling in deeper and more risky environments as well as gas hydrates. Both OHP and SGPP probably need to send liaisons to PPSP to discuss these issues since they address fundamental science.

SGPP

Liaison G. Brass reported on the 14-16 January 1990 meeting of SGPP, which followed the USSAC Geochemistry workshop. The main focus of the meeting was the reviewing of proposals and ranking of programs for the 4-year plan. SGPP also worked on another revision of their white paper and position papers on technology and sampling issues. J. Parkes also presented a preliminary report on the biological activity experiments conducted on cores from Leg 128. T. Pettigrew presented information on the pressure core barrel and SGPP discussed what features would be desirable. SGPP questioned the necessity of routinely collecting and freezing whole-round core samples for future organic geochemistry studies. They suggest that a study be made of the numbers and kinds of research programs done with these cores.

Discussion

von Rad asked why names have been suggested by several panels for a Sealevel Working Group, when PCOM has not formed one. Moberly said that this was done in anticipation of a PCOM action, which PCOM said would follow and be based on the report from the sealevel workshop. Watkins said that the El Paso Workshop Report will be coming out very soon.

TECP

Liaison B. Tucholke reported on the 5-7 March 1990 meeting of TECP, which was held jointly with LITHP. TECP did a thorough job of looking at all the ODP proposals in order to see which new and old proposals had TECP interests in them. TECP would like to see more documentation about the

structural settings of proposals when it is relevant to the objectives. The Chile Triple Junction still remains the top program for TECP, although there is some concern over the location of specific sites. During the joint session with LITHP, the tectonics of mid-ocean ridges was discussed. TECP is concerned that there has not been an appropriate consideration of what tectonic objectives can be addressed by MOR drilling. E. Moores will be preparing a position paper for TECP on MOR tectonic objectives. TECP and LITHP recommended the formation of a Volcanic Margins Working Group. TECP emphasizes that stress measurements in holes of opportunity are important objectives for understanding fundamental geodynamic processes.

Discussion

Natland thought that better guidelines for preparation of proposals need to be formulated so that there is integration of proposals into stronger programs.

Brass asked how TECP would measure stress. Tucholke said that orientation of breakouts in basement holes is the current method; TECP is trying to encourage the integration of these measurements with other programs in holes drilled into basement.

DMP

Liaison M. Langseth reported on the 23-24 January 1990 meeting of DMP. The meeting was held at TAMU and the panel was able to examine the new SES and discuss its operation. DMP was concerned that PCOM had not specifically endorsed its recommendations at the November meeting. Langseth went over the 17 recommendations given in the Executive Summary of the DMP minutes. Moberly pointed out that PCOM does take the advice of its panels under consideration but does not always make specific endorsements of them. Many of the recommendations of DMP involve budget items for the subcontractors and have to be worked out by them, JOI, and the Budget Committee. ODP is putting an effort into developing high-temperature logging tools now that these legs have been put into the schedule. Funds have been shifted to start developing the tools as soon as possible. T. Pyle has undertaken to help coordinate interprogram tool development. The decision not to log the lower section at Site 801C was discussed previously by R. Jarrard during his presentation and needed no further justification. Langseth said he was concerned that reaming of the 4-inch DCS hole to a 6-inch size compatible with the present suite of logging tools is not receiving enough attention from ODP-TAMU. Discussion of the logging at 504B was put off until after discussion of the Engineering leg in Minute 846.

Discussion

Jarrard asked when the reaming option will be tested. Storms said that it might be possible to test this on the upcoming Engineering leg, but he does not consider it a promising option. Natland said that if the DCS works it may

be used at many sites, including use as a mini-riser system, therefore slimline logging tools will be needed. Lancelot said that this was considered before and the ODP budget could not cover the costs of developing new slimline tools. Brass said that the major problem was developing slimline tools for hot environments, suites of slimline tools exist for normal hole conditions. Jarrard said that there is some hope of modifying a small number of tools for hot conditions but at great expense. Leinen said that further discussion should wait until after the Engineering Leg when there will be new information. Lancelot said that since logging is so important to the future of the program, this discussion should be taken up again when there is more time and new data to examine.

IHP

Liaison J. Watkins reported on the 7-9 March 1990 meeting of IHP. The panel has made a number of suggestions concerning problems pertaining to publication of the "Scientific Results" volumes including: enforcing deadlines; keeping Editorial Review Boards; having the staff scientist act as an on-site expediter for the volume; appoint an additional outside ERB member at the request of the ERB chairman to lessen the load. IHP also reviewed the DSDP printed index and recommended that it be published. IHP will review the ODP indexing of volumes and make suggestions. IHP has made suggestions for what kinds of data should be included in the ODP data base. IHP recommends that a second systems manager be put on the *Resolution*.

Discussion

Lancelot asked if the expense to publish the DSDP Index would be small. Meyer said that it would be. Malfait said that there were questions about the utility of the Index in printed form and said that an attempt would be made to put it on a CD-ROM using money outside of ODP.

von Rad asked what was being done to ensure that the Co-Chief synthesis papers would be included in the "Scientific Results" volumes. Watkins said that IHP thought that it was important to have them included and their suggested changes are designed to lighten the load on the Co-Chiefs for this purpose.

PPSP

Liaison R. Moberly reported on the 27-28 February 1990 meeting of PPSP. Sites for legs 132 (Engineering II), 133 (Northeast Australian Margin), and 134 (Vanuatu) were approved. Some of the sites for Legs 133 and 134 were adjusted slightly for safety considerations. On Leg 133 special care in monitoring will be demanded on several sites, especially those along the edge of the Townsville Trough. Both Co-Chief Scientists, an additional geophysicist, and the organic geochemist for Leg 133 were present at the meeting; engineers were present for 132 and both Co-Chiefs for 134.

After a review of hydrocarbon shows in the Sea of Japan on Legs 128 and 129, PPSP and guests began a discussion of current trends of monitoring techniques and equipment. They also had a further discussion of clathrates, and held a discussion of factors in the safety of drilling virgin but potentially hydrocarbon-bearing basins of continental margins. A subcommittee of organic geochemists is to develop expanded guidelines for monitoring gas shows and to draft revisions of PPSP policy on gas hydrates. Their report, and a final one on the Exmouth Plateau drilling, will be presented at the next PPSP meeting.

SMP

Liaison M. Leinen reported on the 20-21 March 1990 meeting of SMP. No minutes were available from the meeting. The decision of SMP is that No Radioactive or Enriched Stable Isotope Reagents be allowed onboard the *Resolution*. Requests for exceptions should be channeled through the thematic panels for justification and passed to SMP for action. Operation SWAB found that the *Resolution* is presently free of contamination. The test of the high-speed streamer was not optimal, but did not indicate any improvement in the records. The opinion of the geophysicists is that the ODP streamer data is not that bad. The system for digital recording of the Visual Core Description (VCD) was examined and judged to be "awesome". The system is flexible and should improve the quality of the VCD. Computer capture of color core descriptions was also demonstrated by R. Merrill. SMP still recommends the purchase of a real-time GPS data monitor and a sulfur coulometer. SMP requests a workshop of paleomagnetists and physical-properties specialists to suggest improvements for the labs and procedures on the *Resolution*.

Discussion

Jenkyns asked about how the exceptions to the rule about no radioisotopes would be handled. Leinen said that the mechanisms have yet to be formulated. Brass said that this needs careful consideration because of the potential conflicts between panels; what may be scientifically desirable for one panel may be a disaster for another.

SSP

Liaison J. Watkins reported on the 9-10 April 1990 meeting of SSP. The panel has examined the complete data package from Leg 136, Engineering 3, and recommends completion of the planned near-bottom seismic study, in order to assess the thickness of the rubble zone, before placement of the guidebases at the EPR. For Leg 137, Sedimented Ridges, all data requested by SSP are now in hand. SSP recommends the collection of near-bottom side-scan data in the Escanaba Trough. For Leg 138, Eastern Equatorial Pacific Neogene Transect, the data are in hand although proponents are refining seismic data with further processing. Regional data packages are now considered generally

adequate for Chile Triple Junction, Cascadia, Atolls and Guyots, North Pacific Neogene and Bering Sea, but SSP has specific recommendations for desirable improvements. SSP will do a final review of Chile Triple Junction when site locations are refined. A July meeting is planned to examine programs in the 4-year track more carefully.

TEDCOM

Liaison J. Natland and TEDCOM chairman C. Sparks reported on the 13-14 February 1990 meeting of TEDCOM. The committee discussed the continued development of the 4500-meter version of the DCS, and inspected the DCS in the contractor's yard. Representatives of the thematic panels presented their technological objectives, especially with respect to deep drilling and the recovery of undisturbed cores in unconsolidated sediment. TEDCOM is concerned about the problem of fatigue failure in pipe that non-destructive testing for cracks has not predicted and suggest that ODP avoid running heavily-used pipe. TEDCOM is favorably impressed with the improvements in the DCS system since Leg 124E which have included: secondary heave compensator; top-drive system and winch; integrated platform, mast, and power-pack systems; core-barrel assembly; diamond core bits; bottom-hole assembly bits; latch for center bit; riser connector-tensioning tool; mini-hard-rock guide base; casing hanger; back-off sub; modified re-entry cone; and DCS 3-1/2 inch drill rod string. The addition to TEDCOM of someone with expertise in high-temperature drilling would be helpful.

838 Deep Drilling

TEDCOM had previously examined the Long-Range Plan in terms of the technological developments that are required and had noted that very deep drilling of Phase 1 and 2 objectives may be realistic but depend on manpower commitment and budget increases. Phase 3 objectives including a MOHO objective may not be realistic and TEDCOM recommended the organization of an International Symposium to address these concerns. PCOM suggested that as part of the 13-14 February 1990 meeting of TEDCOM, representatives of LITHP, SGPP, and TECP present their technological objectives, particularly those related to deep drilling. Discussion centered around the COSOD II goal to drill through the crust into the mantle. To drill this kind of a deep hole will require the investment of both a large amount of time and money (estimates suggest 4 or more years of time and a $500M cost). Some requirements for a hole to this depth include: dedication of a platform for extended amounts of time; a top drive system capable of establishing a large-diameter, perfectly vertical hole; a severing system; a riser system; and downhole turbine drives. In essence, it would be a system vastly different from the one on the *Resolution*. TEDCOM favors the creation of a small task force composed of members of TEDCOM/TAMU/LITHP plus some additional expertise in deep drilling to discuss how to proceed. Access to Russian experience of deep drilling and coring must be obtained.

Discussion

Malpas said that this technological evaluation of COSOD I & II priorities is long overdue. The present evaluation suggests that a dedicated long-term effort in the area of Lithosphere drilling will be needed to obtain these COSOD goals and this would be at the expense of other areas that ODP has pursued in the past. ODP must eventually make a decision about where it is headed. If ODP does not make a commitment to developing these drilling capabilities, then it is the same as saying we are giving up on the COSOD goals. Cowan is in favor of this kind of deep drilling as a scientific goal, but the realities of cost suggest the need for examination of whether or not it should be part of ODP. Watkins said that if these costs are accurate, deep drilling would seem to require development outside of ODP. This makes further assessment of the engineering requirements and costs vital.

von Rad was concerned that other communities within ODP, such as OHP, also require drilling time. Natland observed that programs such as margin drilling and some deep stratigraphic tests require a drilling capability of more than 3.5 km, which cannot be done with the present system.

Lancelot made the observation that ODP is approaching a turning point. Support for continuing in the present mode is waning; new science frontiers and special developments are needed. These can include some deeper objectives, not necessarily through the crust into the mantle, but at least some new and exciting challenges. Deep drilling into the Earth is a new scientific frontier. Leinen suggested that with its well-developed scientific base, ODP can serve as a spring-board for other new programs. Natland said that both COSOD and the workshop on Drilling the Oceanic Lower Crust and Mantle convened by H. Dick showed that there is a broad community interested in deep drilling.

Cita said a study needs to be done to see if the objectives of deep crustal drilling can be accomplished by an offset drilling program and to determine the feasibility of deep drilling considering the financial costs. Natland said that more is needed than just a price tag, we need to start thinking about future programs. Garrison said that the present program will not evolve into one focussing on deep drilling; another structure in parallel to ODP is needed. Leinen said that for a deep drilling program to be successful it would need a structure similar to the one that ODP has developed.

Malpas said that the Long Range Plan needs to be examined to see what other developments are critical for ODP's future. Cita was concerned that there were items in the LRP that may not be technically feasible. Brass said that the LRP was designed to show what new areas of scientific endeavor were viewed as promising for ODP to move into and it was not assumed that the *Resolution* had to have all of these capabilities; alternate platforms were considered as part of the plan. Malpas said that it was important for ODP to

move into new areas of science. Austin said that the LRP was consistent with COSOD goals.

Moberly suggested that a small group meet in conjunction with the next TEDCOM meeting which will include appropriate persons from other deep drilling programs (e.g. Soviets, Swedes, Japanese, Germans, etc.). Austin suggested that a Workshop would have the advantage of including a bigger constituency in the planning. Brass agreed that a large constituency needs to be developed. Austin asked how quickly this effort needs to be developed. Lancelot said that ODP needs to show that it is addressing these concerns and planning new initiatives. Malpas said that ODP needs to be actively pursuing these goals. Jenkyns said that the pragmatic view in the UK is that they cannot pursue both NEREIS and ODP and he was not sure how a separate deep drilling initiative would fit into the picture. PCOM took action in Minute 845.

Wednesday, 25 April 1990

839 Engineering Developments

M. Storms distributed a handout on the status of various engineering developments. He then discussed the following developments: Motor Driven Core Barrel (MDCB) formerly called the Navidrill Core Barrel (NCB3) has undergone further modifications and will be tested again on Leg 134; Sonic Core Monitor (SCM) was tested on Leg 130 where it had 4 good runs but still had some problems with core jamming and will undergo further testing on Leg 134; Drill-In-Casing System (DIC) was successfully used on Leg 131; Advanced Piston Corer-Design Upgrade (APC) was used extensively on Leg 130 where it had a rapid turn-around time and high recovery rate; APC Breakaway Piston Head (BPH) was field tested on Leg 130 where there were problems with premature releases of the piston head resulting in poorer core recovery; TAM Drilling/Straddle Packers (TDP) are ready for use on Leg 131 (Nankai) and a new go-devil redesign allows deployment of a downhole flow-meter; Pressure Core Sampler (PCS) was modified for use on Leg 131 (Nankai) adding another sampling port for sampling fluids by displacement from the chamber and a "harpoon" sampling port for sampling fluids from inside the core sample; Conical Side Entry Sub (CSES) should be available for Leg 133; Vibra-Percussive Coring (VPC) drive unit is under fabrication. Investigation into the techniques and hardware required for high temperature drilling and coring operations is continuing; it is currently planned to test prototype hardware for controlling steam flash hazards on the third engineering leg. The Development Engineering schedules (Appendix E) were shown.

Technical support of third-party developments continues to be a significant role of ODP engineering, these include: Lateral Stress Tool (LAST) being developed by K. Moran for use at Nankai; Geoprops Probe being developed by

Dan Karig which is still in the final stages of fabrication and probably will not be deployed before Leg 134 (Vanuatu); Pressure Meter also being developed by K. Moran which should be ready by the end of Spring 1990; Flow Isolation Plug is under discussion with E. Davis, B. Carson and K. Becker who are seeking outside funding and a prototype plugging system will be tested on the third engineering leg.

The Diamond Coring System (DCS) has been receiving about half of the Engineering resources at ODP-TAMU. Leg 132 will thoroughly test the system in its present configuration. The secondary compensation system has not been fully land-tested and modifications are still being made. There was a computer software problem which resulted in the weight-on-bit not locking in. The system is 80% functional and Storms was confident that the system will be fully operational for Leg 132 tests.

840 Preparations for East Pacific Rise Drilling

Engineering Planning

Storms first discussed improvements to the DCS system and then operational plans for Engineering 3, which are illustrated in diagrams in Appendix F. Storms reported that a major factor in system performance at the East Pacific Rise will be how long the drill bits last during drilling operations. By drilling the BHA into the rubble zone and leaving it in the hole, it is anticipated that the bit life should improve over the short bit life for drilling at the Mid-Atlantic Ridge. This is because redrilling the rubble caving in from the sides considerably lessens penetration rates and bit life. The minimum that the BHA needs to be drilled in is 5 meters. With the Pogo concept it should be possible to find a location where the BHA can get sufficient penetration. The depth to which the BHA has to be drilled to case off the rubble zone will be the determining factor on the length of the Engineering 3 leg. Estimates are that around 25 days will be required per site on the EPR (Appendix F). Current estimates are that it will take about 125 days to drill 2000 m on the EPR using the DCS. At each site established on the EPR about $100K worth of hardware will be left in the hole but the guidebase can be picked up and moved to another location.

East Pacific Rise Detailed Planning Group

A letter from E. Davis outlining the results of the EPRDPG meeting was distributed. J. Austin, who was the PCOM liaison to the meeting, reported that the DPG first examined the report that the former East Pacific Rise Working Group had prepared outlining a general drilling strategy and decided it was still valid. The DPG next examined the data sets for the two competing proposals and decided that the better area was at 9°40'N, based on the geophysical data set which includes seismic refraction studies interpreted to indicate that the top of the magma chamber is reachable by drilling. The time estimates for reaching the high-temperature reaction zone at the top of

the magma chamber is sobering and led to an approach of initially drilling only two holes rather than the 8-hole pattern originally proposed. Current plans are for a 1-1.5 km deep hole slightly off-axis and a 500 m hole in the axial fissure zone. The DPG has recommended that Engineering 3B at the EPR be delayed until after a cruise by M. Purdy in early 1991, which is expected to characterize the rubble zone by a near-bottom seismic study. The DPG has made some suggestions for further site-survey work. Although tentative sites were selected by the DPG, the precise locations were not chosen because the DPG felt the results of the detailed survey by Purdy were needed first. A detailed report will be submitted in time for evaluation by the thematic panels at their fall meetings.

Discussion

Brass asked what the depth was to the magma chamber. Austin said that a negative seismic anomaly at a depth of 1-1.5 km is interpreted to be the top of the magma chamber.

Langseth asked if the plans were to drill an active hydrothermal discharge system. Austin said that in order to avoid high temperatures the plan was to stay away from active edifices, but there are extinct hydrothermal chimneys which can be drilled. A hydrogeologic characterization would not be realistic with only two holes, so this aspect is receiving less attention. Langseth suggested that the drilling might be in the recharge zone and thus avoid higher temperatures in the upper part of the section. Brass commented that there would still be high-temperatures near the magma chamber.

Natland said that based on his experience on Leg 54 and later cruises, the results of Purdy's survey of the rubble zones at depth will have no effect on site locations, since it is the rubble zone at the surface that has the largest consequences for drill bit life and you can get only 20-30 m of penetration in rubble. The only way to get stability in the upper part of the hole is to drill in fairly thick and unfractured lava flows. Natland suggested putting in the minimum amount of BHA, because if we could drill 150 m with the present rotary system there would be no use in developing the DCS to drill and core in fractured rocks. Storms said that by casing off a rubble zone with the BHA to avoid having rubble fall into the hole, the bit life and penetration rates should be improved. Natland asked what was the concept for the pilot hole and how would it be drilled. Storms said it is a bare-rock spud into the formation with the BHA and a mud-motor to see how much penetration can be obtained, so the correct amount of BHA can be made up for the hole for the DCS. Brass said DSDP results suggest that in rubble you do not get any significant penetration, but in massive flows you get penetration but the bits wear out very soon; you will be lucky to get 10 hours of drilling from a bit. Storms said that the bits have been significantly improved to enhance their life, but he agreed that 20 m of penetration is probably all that can be expected. Storms said that if they can drill and core another 100 m with the DCS then

there would be enough hole to do as the DPG thought and make some slimline logging runs, especially to establish a temperature gradient.

Brass suggested that the best location for the sites would be in topographic lows with sheet flows, which will require local-scale seafloor surveys. Duncan asked if there was enough known about the surficial geology of this area to locate massive flows. Austin said that Fornari and Haymon have extensive electronic still camera images of the bottom in this area. Collapse features from 10 to 15 m across are observed which raises the specter of losing a guidebase.

Natland asked if the DPG had recommended the establishment of one or two holes as their priority. Austin said it was his reading of the DPG that they thought that at this time it was most important to establish the one off-axis site for the science drilling leg. Austin said the DPG debated if a science party was needed on the Engineering Leg. Moberly said that the original concept of the Engineering Leg was to spend some time preparing to drill at 504B and deploy guidebases at the EPR without needing a science staff onboard; now the ideas being proposed suggest that more time is needed to prepare for the science drilling leg. PCOM needs to make some decisions about where this leg is headed. Storms said that it is estimated that about one-half of a leg would be needed to set two guidebases and start holes; establishment of these holes on an engineering leg means that more time can be devoted to coring on the science leg. An engineering leg to establish two holes will also provide more information on the capabilities of the DCS system. Moberly said that there would still be a strong science component to the leg. von Rad said that it will take more than one science leg to drill the deep hole. The EPR was identified as a long-term science laboratory from the beginning.

Langseth asked if the DPG would meet again. Moberly said that they were asked to choose between the two proposals, which they have done, and to prepare a drilling plan, which they may or may not have done. Austin said that it may require another meeting to examine the sites in more detail. Langseth said that he thought that the DPG needs to look at the balance between the science that might be achieved and the engineering objectives for setting the guidebases.

841 General Direction of the Vessel for the Next 4 Years

The major item of business for this meeting was to determine a general track for the *Resolution* for the next four years. Programs from any ocean were in competition and had been ranked by the four thematic panels. A review of the rankings of programs by each thematic panel was led by the PCOM liaisons to the last panel meeting. A summary of these rankings is given in Appendix G. In addition PCOM needed also to consider advice from other panels, the Science Operator, and Wireline Logging about such factors as: engineering preparedness; logging (and other tools) preparedness; status of

site surveys; weather or clearance problems. PCOM was also to consider: balance among scientific themes, at the panel level and within panels; balance between the extremes of (a) transiting from the highest-ranked program to the next-highest, in any ocean, and (b) picking up all programs in an area before leaving that part of an ocean; balance in temporal aspects, between (a) interval since a drilling vessel was last used for the scientific interests of one part of the community, (b) commencement or continuation of long-term, multi-hole programs that may chiefly concern one part of the community, and (c) objectives of COSOD I, COSOD II, and the Long Range Plan.

Austin suggested that the first order cuts for determining the general direction of the vessel is to look only at the top 5 ranked programs from each thematic panel. Leinen said that PCOM needs to make sure that the panels have the opportunity to get their top-ranked programs drilled. This includes having the vessel in the right areas with sufficient time and giving the panels the resources (e.g. DPG) to develop programs that are not mature. In order to set the general track she suggested some criteria for making difficult decisions: 1) Each panel should expect to see at least 1 leg from each of their 2 highest-ranked programs drilled over the next four years regardless of multiple panel interests; 2) It is better to devote more than one leg of drilling to a top-ranked program than to drill a lower-ranked program; and 3) programs of interest to more than one panel that are highly-ranked should also be considered. The priorities of the thematic panel should guide the allocation of resources.

Brass said that at this point PCOM needs only to set the general ship track; programs remain in competition for drilling time. Lancelot said he agreed with the general statement by Leinen. The track of the ship, engineering developments, site-surveys, weather windows and other factors will eventually determine what gets drilled. By setting the general ship track, PCOM will be telling the panels where to put their efforts over the next four years. Austin said that the implications of the statement by Leinen is that we are willing to accept less efficient use of the vessel by long transits and by-passing of some areas of lesser interest. Cowan was concerned that PCOM may not be democratic in its allocation of drilling time, so we may not be able to drill all high-ranking programs. Leinen said that PCOM needs to adhere to the thematic rankings of the panels to be consistent with what we told the community.

Brass said that PCOM may be trying to over-constrain itself; all that is required at this meeting is a general ship track and not a 4-year drilling site plan; PCOM needs to leave opportunities open for program development and new ideas. The community needs to know where the ship is going so that they can continue to improve old proposals or submit new ones. Moberly said that the general ship track will also allow funding agencies to know where to fund site-surveys, what instruments to develop, how to allocate ODP resources. The track will be pinned down on certain points by the weight of

programs in that area, but this does not mean that these will all get drilled or others might not replace them. Malpas said that PCOM needs to adhere to the thematic advice given by the panels. A few fixed points are needed in the track, and these should be based on the thematic rankings. Leinen agreed that the track should focus on a few fixed points.

von Rad asked which parts of the next four years to April 1994 were relatively fixed and which parts were open. The FY 1990 program is set and being drilled, the FY 1991 program plan and the rest of 1991 have been planned but there are suggestions for modifications in the Engineering 3 Leg. For the purposes of this meeting, PCOM needs to set the ship track for 1992, 1993, and 1994 until April. The program plan for FY 1992 will be set at the next Annual meeting.

Malpas suggested that time constraints are useful for focussing thinking and loops may take away from this; the general track of the vessel should be to areas rather than specific sites. There are approximately equal numbers of programs in the Pacific and North Atlantic that are ranked very highly. Malpas suggested that the time should be divided about equally between the two areas. He suggested that the order be based on what is drillable at this time and therefore there be two more years of drilling in the Pacific followed by two years in the North Atlantic.

von Rad said that he had a similar idea to that of Malpas, with drilling in the Pacific including Chile Triple Junction, Cascadia, Sedimented Ridges 2, Hess and the Oahu pilot hole. Drilling would next move to the North Atlantic based on the highly-ranked programs located there. This would include drilling in both oceans of programs with the highest rankings.

Lancelot said that a proposed track in these two areas would address the highest scientific priorities of the thematic panels and satisfy any parochial interests in the Atlantic. The decision would be based solely on the scientific merits without any political considerations.

Cita said that the time should be shared between the Atlantic and the Pacific based on the weight of the rankings of the programs.

Jenkyns said that the Caribbean would provide an appropriate hub. He was concerned that the highly-ranked Atolls and Guyots programs would probably get ignored because of the geographical bias caused by the long transit times.

Suyehiro said that a track in both the Pacific and Atlantic would satisfy the weight of the rankings by the panels.

Austin thought that ship tracks radiating outward like a wagon wheel from a central eastern Pacific hub would be the most appropriate. Long transit times have to be considered.

Natland was concerned that the preparedness of the Atlantic programs for drilling was not being taken into account. More time should be allowed for preparing the Atlantic programs for drilling. There are more Pacific programs in the top 10 than Atlantic programs, and many of these are ready to drill. Jenkyns said that this readiness was because the Pacific programs have had more time to be developed and therefore it would not be fair to compare them on the basis of preparedness. Langseth agreed that the Eastern Pacific has had a longer time to prepare and thought that a 1993 target for the Atlantic was appropriate. Natland said that the Atlantic passive margin drilling is very ambitious and more work needs to go into establishing the best drilling approach before the ship goes there. Cowan said that they could be drilled now and provide as much new information as came from past drilling on Leg 104 and during DSDP. Tucholke said that most Atlantic proposals were at about the same state of preparedness that the EPR proposal was 3 years ago. He sees a general balance between Atlantic and Pacific legs based on the thematic panel rankings but was concerned with the loss of drilling time if the ship were to transit frequently between the Atlantic and Pacific Oceans.

Leinen thought that just the top-ranked programs should get drilled. Jenkyns said that the top-ranked program of each panel should get drilled. Jenkyns was also concerned about the scoring - *i.e.* does a program that is, say, rated very highly by 2 or more panels score as highly as one rated top by 1 panel only. Moberly asked if drilling the top-ranked programs of each panel means an exact 25% split of the time or do we include programs of multiple panel interest which will distort the balance.

Malpas suggested that the general ship track should focus on two areas, the North Atlantic and Pacific, based on the present rankings by the thematic panels. Planning should be for approximately 15 months of Atlantic drilling, this will help to focus further planning for these programs. Lancelot agreed with this suggestion provided that it was understood that only the best science will be done. Malpas then proposed the following motion which passed unanimously.

<u>PCOM Motion</u>

Recognizing the thematic priorities of the advisory panels, the Planning Committee has decided that the *JOIDES Resolution* will operate in two areas in the four years beginning April 1990, *i.e.* the Atlantic Ocean north of the equator and the Pacific Ocean. A preferred scenario is that the ship will continue in the Pacific until October 1992 and transit then to the Atlantic for a program that will continue through the completion of this 4-year plan. (Motion Malpas, second Brass)

Vote: for 16 ; against 0; abstain 0

Leg 127 Japan Sea 1

Co-Chief Scientist Ken Pisciotto described the results of Leg 127 in the Japan Sea, one of the best known backarc basins in the western Pacific. Legs 127 and 128 were designed as a multifaceted drilling program to better constrain the tectonic, sedimentary and paleoceanographic history of the basin. The principle objectives of Leg 127 were to discover the age and nature of the basement, opening history of the Japan Sea, the dynamics of opening, paleo-environmental history, the present stress field in a developing plate boundary, and preparations for long-term borehole seismometer experiments.

Recovery of sediments were generally good, averaging between 52-65%, with the HPC providing significant improvements over Leg 31. Acoustic basement was reached and found to be interbedded sediments and basalts. Abundant volcanic ash layers were found and will be helpful for dating, especially since microfossils are absent in cores below 300 mbsf. There is a good magnetic reversal stratigraphy back to 5 my. Sedimentological studies indicate a rapid dropping of the basin following rifting at 19 my. Extensive deltaic sediments built out into the basin as it continued to widen and deepen. About 1.8 my ago the basin began to close and the Okushiri Ridge was obducted. Evidence for the presence of clathrates were found in some cores.

Leg 128 Japan Sea 2

Co-Chief Scientist Kiyoshi Suyehiro described the goals and results of Leg 128 which was the second leg of the multifaceted Japan Sea program. Primarily goals for this leg were drilling on the bathymetric highs for recovery of undisturbed sections for paleoceanography, collection of cores for bacterial activity studies, drilling in a failed rift to study metallogenesis, and make geotechnical measurements. Sediment cores provided detailed depositional and uplift history of the Okushiri Ridge, and cyclic deposits for detailed studies of Quaternary paleoceanography. Drilling in the failed rift which is similar to that inferred for the Kuroko deposits in Japan, did not find the massive sulfide deposits expected. Unusual sediments found included glauconite sands and rhyolitic tuff sands. Logging results have revealed a 41 kyr Milankovich cycle for the cyclic light and dark sediments extending back to 2.5 my.

The downhole seismometer experiment was designed for a high resolution study of seismicity in the Japan Sea including earthquakes and teleseisms. The data package will be recovered by rope after being released by an acoustic signal. The seismometer was initially tested in real-time using a second ship as the seismic source. The initial results indicate that the noise level recorded by the downhole seismometer is higher than quiet land stations but clearly lower compared to an ocean bottom seismometer. The electrical resistivity

experiment indicated that the Japan Sea has relatively cold lithosphere and upper mantle.

Leg 129 Old Pacific Crust

Co-Chief Scientist Yves Lancelot summarized the results of Leg 129. The main objective of this leg was to recover Jurassic sediments and the volcanic basement from the Pigafetta and East Mariana basins of the western Pacific. There has been extensive efforts extending back to Leg 6 of DSDP to get through the cherts and extensive basalt flows and recover the oldest open-ocean sediments and ocean crust. The chert problem was solved but the massive volcanogenic layers have frustrated efforts to penetrate basement. Windows through the basalts were needed and eventually identified by new seismic work and improved maps of the magnetic anomalies.

The first site drilled in the Pigafetta basin found clay, chert, carbonates, volcanogenic turbidites and Cretaceous volcanic flows. The second site 801 was finally successful in penetrating to igneous basement and recovered Tithonian-Callovian sediments. A reentry cone was set and this site was later reoccupied and drilled deeper into basement. The site in the East Mariana basin drilled volcanic tuffs, redeposited sediments, carbonates, upper Cretaceous volcanogenic sediments, and Cretaceous extrusive basalts. Reoccupation and further drilling at 801C cored an extinct hydrothermal system similar to the one in Cyprus. Jurassic radiolarites were recovered and are similar to the Tethyan in the Alps. Hole 801C is clear and cased to basement and ready to be reoccupied for further drilling and logging.

PCOM congratulated Drs. Pisciotto, Suyehiro, and Lancelot for their success, and thanked them for their presentations.

843 Modifications to the FY91 Program Plan

Suggestions were made earlier in this meeting that changes in the timing of the Engineering 3 Leg be made for scientific reasons. The Science Operator had also previously suggested some modifications for budgetary and engineering development reasons. BCOM had shifted SOE money to the DCS which helped solve the budgetary problem. ODP-Engineering is still concerned that following Leg 132 the DCS will be at TAMU for only 4 months before the system needs to be shipped for Engineering 3B. Sufficient time for improvements in the DCS system may not be available.

Kappel said that T. Pyle recommends the Oahu Pilot Hole be included in the FY91 drilling following Leg 135. This would show a commitment to cooperate with other international geoscience programs.

Leinen said that a simple reordering of legs is different than the addition or the subtraction of a leg. The suggestion by the EPRDPG suggests that a delay

in the Engineering 3 part at the EPR is appropriate. Moberly said that reordering will mean moving the Eastern Equatorial Pacific Neogene Transect to earlier in the schedule. Natland said that the changes proposed for Engineering 3B will make this leg about 55 days which means a full leg length of activity. Storms said that the 55 day length for Engineering 3B can be adjusted by the types of activities planned and the depth to which the BHA is drilled into the formation. Austin said that for the Engineering 3B Leg the EPRDPG now favors the establishment of the deep off-axis hole rather than setting two guidebases. Storms said that the one site would be sufficient for the engineering development tests.

Brass suggested that Engineering 3B be delayed and that the Oahu Pilot Hole be moved into the schedule. Cita said that the Oahu pilot hole should be moved into the schedule as soon as it is appropriate. This project involves a large scientific community whose support will be of value to ODP.

Leinen said she supports cooperation with other programs but thought that the Oahu pilot hole does not have high enough support to justify moving it into the FY91 schedule. It is a bad signal to the thematic panels and to the whole community that we are adding something not in the top few priorities. Jenkyns said that if ODP is going to ally itself with other global programs, exactly the same argument could be made for moving Atolls and Guyots into the schedule since it is of interest to international programs whose support should be courted.

Lancelot said that he thought that the Oahu Pilot Hole had good support from TECP but he agrees with Jenkyns that other programs could equally well be moved in for similar reasons. The Oahu Pilot Hole will give ODP a high return of good will with only a small investment from the program. Langseth said he was in sympathy with ODP showing good faith but that PCOM should not be stampeded into putting this program into the FY91 schedule, since it could also be done in 1992. Tucholke said that he was in sympathy with Jenkyns point-of-view and that other programs such as the North Pacific Neogene should be considered. The Oahu Pilot Hole does represent a contribution by ODP to what could be a very important international program that will reveal fundamental geodynamic processes.

Leinen said that the panels should have the opportunity to evaluate this program against others. Lancelot pointed out that the proposal was evaluated by TECP and LITHP in competition with these other programs. Natland said that there should be a direct science return for ODP for drilling the Oahu Pilot Hole; ODP should not be in the position of having to encourage funding for the other study. Tucholke disagreed and said that the persons involved in the Oahu Pilot Study felt that they had to have a commitment to have the hole drilled before they could honestly put in a proposal to do the pilot study. This proposal has been in the system for some time and it is now time for

PCOM to give them an answer about cooperation. von Rad said that the project has strong support in the German seismology community and ODP should decide if it will support drilling the hole in the next two years of Pacific drilling. Suyehiro said that he thought that the Oahu experiment was good, but there would be some risks associated with putting the seismometer down the borehole.

Moberly said that with now a fixed date to leave the Pacific these extra days will displace a program of higher rank. Also, there have been unexpected delays because of the Singapore drydocking and additions to the Vanuatu leg. Langseth said that it looks reasonable to delay Engineering 3B at the EPR and shift programs around. Malpas agreed and suggested that the preferred scenario for the four-year track be changed so that the Pacific drilling is extended by one-half of a leg to do the Oahu Pilot Hole. He said that there was sufficient flexibility built into his motion to allow this. Austin asked if the changes proposed for the Engineering Leg at the EPR would make it more of a joint science and engineering leg. Moberly said that would depend on what PCOM decides to do with the leg (further discussion in Minute 846).

PCOM Motion

Following transit from the Lau Basin, a FDSN Test Hole north of Oahu will be drilled for a pilot study for an oceanfloor seismic station. This drilling is to be followed by the following legs in the order: Engineering 3A at 504B, Eastern Equatorial Pacific Neogene Transect, Sedimented Ridges 1, either 504B (if Engineering 3A is successful) or Engineering 3B at the East Pacific Rise (if Engineering 3A is not successful). Engineering 3B will follow 504B if Engineering 3A is successful. (Motion Natland, second Cita)

Vote: for 13; against 0; abstain 3

Brass said that the proponents for the Oahu Pilot Hole should submit a more detailed proposal for evaluation by the thematic panels. Decisions will have to be made about siting and coring. Meyer said that a cruise prospectus may not be prepared if there is no plan for coring. von Rad said that he thought there should be a thorough review of the proposal by TECP and LITHP who provided the support. Some science for ODP should come from this drilling.

Thursday, 26 April 1990

844 Preparation of the FY 1992 Prospectus

In order for PCOM and the thematic panels to have a set of information for evaluating programs for inclusion in the FY92 program plan, a prospectus needs to be put together by some group. The programs will come largely from those given in the latest CEPAC prospectus with the addition of several other Pacific programs ranked highly by the thematic panels. PCOM must decide who is to prepare the prospectus and what programs to include.

Natland suggested that the thematic panels could coordinate with the proponents of the additional programs to produce a document. von Rad said that a group selected from the thematic panels could prepare a document. Leinen objected that this could be considered a conflict of interest since the panels would also have to evaluate the programs. Austin said that a competitive atmosphere should be fostered.

Natland said that it is essential that some group with the appropriate knowledge calculate the time required to do the science and set some priorities. This was coordinated by the regional panels in the past and more recently by a DPG. Duncan said some uniform level of preparedness is required; something that includes primary and alternate sites, drilling and logging times, priorities and contingencies. Leinen said that the consensus at the WHOI meeting was to form a DPG to do this task.

Brass suggested that since most of the programs have been updated for the most recent CEPAC prospectus, that the JOIDES Office could coordinate the addition of the Peru Gas Hydrate and Hess Deep programs to this prospectus. PCOM would ask the proponents of these two programs to bring them up to the status of the other programs in the prospectus in time for preparation of a prospectus for evaluation by the thematic panels this fall. PCOM agreed that this was the best approach with the amount of time available.

845 Preparations for Drilling Beyond FY 1992

In order to prepare for drilling after FY 1992 various Detailed Planning Groups and Working Groups have been suggested.

Natland suggested that four were needed: a Volcanic Margin Working Group, a Sealevel Working Group, the Deep Drilling Task Force, and an Offset Drilling Strategy Working Group.

Cita proposed an Accretionary Prism Working Group to develop a coherent strategy for prism drilling. Langseth said that the Fluid Processes in Accretionary Prisms Working Group had prepared a report outlining drilling strategies. Brass thought that TECP should consider how best to approach developing a drilling strategy for accretionary prisms. Lancelot agreed that TECP needs to rank drilling prisms against one another and develop an approach that will have a coherent strategy. Brass said that SGPP also has a strong thematic interest in drilling accretionary prisms. Cowan said that TECP and SGPP will have an overlapping meeting in Paris next fall and it would be an appropriate charge to have them consider how to develop a coherent strategy. PCOM agreed that this was appropriate.

Langseth said that LITHP should be charged to develop a strategy for drilling offset sections. Duncan said that this has been done already by the JOI/USSAC workshop on Drilling the Oceanic Lower Crust and Mantle

convened by H. Dick. Brass said that LITHP and TECP should take this document and work together to develop an integrated approach. Natland said that there are 8-10 places where the deep crust can be studied by offset drilling and a group is needed to pick the best places to do this. Leinen and Lancelot thought that choosing the place was best left to the panels. Brass said that LITHP should be charged with making recommendations for establishing an approach for drilling offset sections. PCOM agreed to the suggestion.

Leinen said that importance of Deep Drilling for the future of ODP requires some group to be charged with this responsibility. Lancelot agreed that it was very important for ODP to move ahead on this matter. Natland said that it was important that TEDCOM provide its input. The following motion was made.

PCOM Motion

> The Planning Committee recommends the formation of a Working Group on Deep Drilling. PCOM requests that the PCOM Chair consult with the TEDCOM chairman and thematic panel chairmen to formulate an appropriate membership and mandate for the Working Group for presentation to PCOM at its August 1990 meeting. (Motion Brass, second Leinen)
>
> Vote: for 16; against 0; abstain 0

Brass suggested that a Sealevel Working Group was needed to focus generalities on to the actual Ocean Drilling Program. Watkins said that the report of the El Paso workshop would be out in a few months. The Conclusions section is finished. Moberly requested that the Conclusions section be sent to the chairmen of the four thematic panels. Lancelot asked what would be the mandate of the group. Brass said that they would formulate an integrated strategy for studying sealevel change by drilling. PCOM agreed to consider the formation of a Sealevel Working Group at its August meeting after the results of the El Paso workshop are examined by the thematic panel Chairmen and suggestions are made for an appropriate mandate and membership for such a group.

Lancelot suggested that PCOM form a Rifted Margins Working Group. Austin said that there has been a JOI/USSAC Workshop proposed to look at the problems of volcanic margins. Brass asked if the workshop should be followed by a DPG. Brass said that PCOM is planning for 15 months of drilling in the North Atlantic beginning in about 2.5 years, so we need to begin planning this drilling as soon as possible. Austin said that the decision about whether it will be a volcanic or a non-volcanic margin drilling program will affect the strategy. von Rad said that TECP and LITHP have suggested a membership for a Volcanic Rifted Margin Group which includes persons who would be on any group regardless of whether it was a volcanic or a non-volcanic margin drilling program. Austin said that nominees are needed for

a more diverse and less specialized group. Tucholke said that he does not think it appropriate to have a combined volcanic and non-volcanic margin group. Volcanic margins require a working group to sort them out since there are many proposals in different areas. The North Atlantic non-volcanic margins are a different group of persons looking at different problems. Strategy and tactics are needed for approaching these different problems. Two DPGs would handle making plans faster. von Rad said that providing manpower for two such similar groups could be a problem for the non-US partners. Lancelot thought that the one group to evaluate both volcanic and non-volcanic margin drilling programs was needed to get the work started and to make choices between the competing proposals. Malpás said that there are time limitations on what can be drilled and therefore competition for drilling time. A single group can come up with a focussed multiple-leg drilling program that will be in competition with other programs in the North Atlantic. Leinen suggested that the DPG be divided into subgroups that can meet separately if needed. The following motion was made.

PCOM Motion

> PCOM establishes a North Atlantic Rifted Margins Detailed Planning Group combining expertise on volcanic and non-volcanic margins, the chairmen of the thematic panels will be consulted about possible members and PCOM will set membership and establish the mandate for the DPG at the August 1990 meeting. (Motion Natland, second Brass)
>
> Vote: for 15; against 0; abstain 1

When the mandate for the DPG is formulated it will be decided if the DPG should be looking at conjugate margins. The non-US partners should be prepared to name persons to the DPG if they wish.

In order to prepare for North Atlantic drilling another DPG was suggested for integrating the North Atlantic Arctic Paleoceanographic Gateway proposals.

PCOM Consensus

> After consultation with the thematic panels, a North Atlantic Arctic Paleoceanographic Gateway Detailed Planning Group will be formed and staffed at the August 1990 PCOM meeting.

Since two DPGs are going to be formed to work on North Atlantic proposals, PCOM decided not to form an overall DPG for this area at this time. Brass and Leinen suggested that the proponents of the top ranking proposals (top 5 Atlantic ones) from each panel be requested to bring their proposals up to prospectus style. PCOM, after discussion about how to keep programs progressing towards maturity and keep them competitive, came to the following consensus.

PCOM Consensus

The proponents of the top-ranked Atlantic proposals are to be informed that they should be endeavoring to bring these proposals to maturity so that they will be ready if chosen for drilling.

846 Strategy for Engineering Leg at 504B and EPR

The Engineering 3 Leg has engendered considerable discussion after the last PCOM meeting. At present, as in the approved Program Plan, there will be two components in preparation for lithospheric drilling in the eastern equatorial Pacific: 1) an attempt to clear the junk at the bottom of hole 504B so that it can be deepened to layer 3; followed by 2) setting of two hard-rock guidebases on the EPR at sites to be named by the EPR-DPG and approved by PCOM, so that the EPR bare-rock work can progress. Considering earlier recommendations from LITHP, PCOM decided that there would be a minimum of scientific work on what would be essentially an "engineering operations" leg. Considering the transit time, the Science Operator asked that the leg be split in two parts by a Panama port-call.

Various proposals have suggested that deepening of 504B be: 1) by milling followed by coring to layer 3; 2) by whip-stocking and re-drilling the lower part of 504B; or 3) by spudding a new hole near 504B. If a new hole is required, proposals have been: 1) drill close by, so that the upper part can be considered a near-duplicate to the present TD of 504B, then core deeper; 2) core close by, to and deeper than the present TD of 504B; 3) choose a place in the near vicinity (few km) to core to the top of layer 3; and 4) abandon the 504B area and choose a better place in any ocean for obtaining the layer 2-3 transition and the upper part of layer 3.

There have been recent panel requests to extend the time of Leg 136 to allow more coring and logging. Most recently LITHP has proposed the following for Engineering Leg 3A at 504B: after reentry, log temperature, sample fluid, and measure permeability; then mill (and fish or both). If the hole is cleared with time remaining, core ahead. If it becomes obvious that clearing will be unsuccessful in the allotted time, the remaining time should be devoted to as full a logging program as possible. DMP has made similar recommendations for logging with the exception that they propose a more extensive logging program before casing the hole in place of coring ahead.

Malpas asked why the whip-stocking option is no longer considered a suitable option. Storms said that with whip-stocking the chances of drilling ahead more than a few tens of meters is low; the bend causes many problems with the drill string and casing. Storms said that the Engineers feel that the best chance for getting deeper is by drilling another hole without coring. Duncan said that LITHP does not support that option and prefers the milling option at this time. Storms said that it will be known within 14 days if milling will

work. Natland asked what will be done if 504B cannot be cleaned. Moberly said that LITHP has considered the options and recommends that additional logging be done along the lines of DMP recommendations. Langseth said that DMP has some suggestions that are different from LITHP. DMP recommends there also be sidewall coring. Jarrard said that ODP has not done hardrock sidewall coring. Langseth suggested that DMP recommendation #8 about measurements before recasing be accepted. PCOM agreed that hole 504B should not be recased prior to making the DMP suggested measurements, but these measurements do not have to be done on the Engineering Leg. PCOM passed the following motion.

PCOM Motion

PCOM accepts the LITHP recommendations for logging, milling operations, and drilling ahead at 504B. (Motion Leinen, second Brass)
Vote: for 14; against 0; abstain 2

LITHP has recommended the following for Engineering Leg 3B at the EPR: Rather than deploying two old-style large and expensive bare-rock guidebases with no actual coring, there should be, if possible, establishment of two or more drill sites on the EPR using one of the recently designed options. The use of "pogo" mini-guidebases and drill-in casing has been suggested, that presumably would leave sealed holes, cased by the abandoned BHAs, cored to about 50 m depth. They would be ready for further deepening on future legs. If these new techniques are unsuccessful, Engineering 3B could be used to try an array of others. The consensus of the EPRDPG was that the focus for the engineering leg should be the establishment of the deep off-axis hole.

Brass was concerned that the length of the Engineering 3B leg is approaching 60 days and is no longer just an engineering leg. PCOM therefore requested that before the August PCOM meeting, ODP-TAMU Engineering provide a list of options for the leg with associated time requirements. At the August meeting, PCOM will decide what to do with the Engineering Leg at the EPR.

847 Recommendations on Publications

IHP has made a number of suggestions concerning problems pertaining to publication of the "Scientific Results" volumes including: enforcing deadlines; keeping Editorial Review Boards; having the staff scientist act as an on-site expediter for the volume; and appointing an additional outside ERB member at the request of the ERB chairman to lessen the load, which were mentioned previously in Minute 837.

Duncan said that some of the suggestions have been already accomplished by TAMU. Communication among the 4 members of the ERB is difficult and he thought a meeting of the ERB at a late stage is a good recommendation. Meyer said that a second outside member will not help improve

communications. Moberly said that the idea was to lighten the load on the Co-Chiefs so they can write their syntheses. Lancelot thought that giving more control to the staff scientists should help improve communications. Lancelot said he did not think adding a member to the ERB would help, since the Co-Chiefs need to read the manuscripts in any case.

Duncan said that the load related to reviewing manuscripts is not a problem, it is more of a problem getting the manuscripts in time to write the synthesis. Meyer said that this is not a problem that will be solved by moving ODP Publications under Science Operations. von Rad said that having another person looking at the manuscripts will not speed up getting them to the Co-Chiefs. Austin said that PCOM should wait and give the changes already made some time to work before making further changes. Watkins said that PCOM asked IHP to look at the ERB and they have done so; IHP has made a recommendation to keep them and PCOM should accept it.

PCOM Motion

PCOM recommends the continuation of the Editorial Review Boards. (Motion Watkins, second Natland)

Vote: for 16; against 0; abstain 0

PCOM was concerned about the loss of synthesis papers from the "Scientific Results" volumes. Watkins said that the burden placed on the Co-Chiefs should be lessened. The staff scientists should be given more responsibilities to help expedite manuscripts. Lancelot suggested that manuscripts should not be rejected without the concurrence of the staff scientist and Co-Chiefs. Duncan said that the major problem comes from the late submission of manuscripts. The new system of post-cruise meetings should help solve this problem to the extent that the synthesis can be started after this meeting. von Rad suggested that some mechanism is needed to ensure that there is some time to finish the synthesis after the manuscripts come in. He suggested the following and PCOM concurred.

PCOM Consensus

In order to encourage the inclusion of synthesis chapters in the "Scientific Results" volumes, PCOM suggests that the deadline for the synthesis chapters be 3 months after the submission deadline for the last manuscript for a volume.

Plans for the meeting of the former Indian Ocean Panel and Indian Ocean Co-Chief Scientists were reviewed by Duncan. The plans for the meeting are proceeding. The meeting will be in late June or July of 1991 in Cardiff Wales and will be hosted by R. Kidd. Participants will write synthesis papers along thematic lines for publication in a volume. Negotiations with AGU are proceeding for a Monograph series. AGU wants to know who will be the editors and have a Table of Contents before agreeing. D. Rea and R. Duncan

will probably edit the volume. There is a proposal in to JOI/USSAC to fund participation in the workshop by US scientists.

Moberly informed PCOM that B. Taylor is willing to organize a thematically based meeting and volume on Western Pacific drilling. He wants to wait until at least the final three legs of the program are drilled (NE Australian Margin, Vanuatu, Lau Basin-Tonga).

848 Criticisms of the JOIDES Advisory Structure

The following topics show the range of recent criticism of the existing structure and policy of the program. They appear to be as important in some minds as the topic of outside membership on EXCOM and PCOM.

- Adequacy of current review procedures, including outside reviews of novel proposals; concept of maturity meaning multi-channel seismic lines as illustrated by K. Hsü correspondence.

- Importance of program, both absolute and relative, to other earth-science initiatives as illustrated by R. Coleman correspondence.

- Lack of economic or applied science aspects to ODP drilling as illustrated by D. Sangster letter.

- Co-chief selection and responsibilities; cruise prospectus as illustrated by letters from R. Larson and Y. Lancelot, and R. Wilkens.

- Lack of long-term commitment *i.e.* select best area and return until problem is solved as illustrated by P. Robinson letter.

Leinen said that in regards to the letter by Hsü, there is a difference between being open to new opportunities and not being supported by a thematic panel. Langseth said that the review processes have changed as well; now all proposals get reviewed by the thematic panels. JOIDES has responded to this criticism. Brass said that JOIDES has made many changes, including eliminating regional panels and making sure that proponents get feedback from the panels. Tucholke asked if there was a policy about written reviews to proponents. Moberly said that a year and one-half ago changes were made to send proponents a written response from the four thematic panels. Tucholke said that the negative points brought up by Hsü should be refuted in a letter showing the changes in the program that have been made to solve these problems.

PCOM affirmed its earlier policy for itself and JOIDES thematic panels that, during discussion and voting (ranking) of a proposal, any of the proponents listed on a proposal who are present as members or guests must leave the room. Further, PCOM agreed that it is not proper at a meeting that will lead

to voting to ask a member or guest who is a proponent for a "summary" or "clarification" of some point, because proponents of other proposals (being absent) do not have the same advantage of direct communication with the panel. If more information is needed, there are mechanisms in place for proponents to respond.

PCOM Consensus

> Proponents should not be present during the part of the panel meeting when their proposals are being reviewed or ranked.

Cowan said the comments made in Coleman's letter are extremely important for ODP. Coleman's opinion represents that of a large community of scientists who do not work in the marine geosciences, who have low operating budgets and view the large budgets for the ocean sciences as a drain on their funding. It is a community that needs to be reached and shown the benefits coming from ODP. Leinen agreed that it was a disturbing letter. ODP has not made an effort to reach out to other segments of the geoscience community. There has been some effort to form liaisons with selected other international programs that have overlapping interests with ODP, but EXCOM needs to take a lead in reaching out to other groups and help show the benefits of ODP science. A steering committee concept needs to be adopted, and EXCOM should help establish relationships with other geoscience initiatives. EXCOM members commonly operate on a different level than PCOM members do. Lancelot said that the problems are caused by the lack of advertising of the progress being made by ODP in tackling great science problems. ODP needs to lobby for the science that is being done. We also need to highlight some new initiatives that are in the forefront of science and which can reach out to other global programs. The LRP did not do this in an effective way. ODP needs to develop a higher profile with some public relations work. Malpas agreed and suggested that ODP should use the experience it has gained in 25 years of operation to provide leadership for other programs. Langseth said that there appears to be a misconception about the exciting science being done by ODP. Leinen suggested that JOIDES form a group to act as a spokesman for the science that is being done by ODP. EXCOM needs to be educated about the specific links that need to be formed to integrate ODP into these other global initiatives.

Malpas said that there is a malaise effecting ODP as a whole and within the Canada-Australia Consortium. There is a need to show that ODP is still doing first-class science and to integrate our initiatives with other international programs. There is a need to educate other scientists about ODP.

von Rad said that ODP in Germany has prepared it own LRP to show what is being planned and how it compares to other programs competing for funds. ODP is superior to these other programs.

Jenkyns said that ODP is well thought of in the UK. It is attractive to the land geological community from which many participants on drilling legs come.

Suyehiro said that although the program is well-supported by oceanographers, there is a larger geoscience community in Japan and there may be some problems getting support for renewal after 1993.

Cita said that the ESF Consortium considers the program to be very strong with new science being attempted. There are many active participants in the drilling program.

Lancelot said that there is a large geoscience community support in France but new initiatives are competing with ODP for funding. Unless there is a change and some new high-profile initiatives such as deep drilling and global change are highlighted, there may be some problems with renewal after 1993. Constant funding has been interpreted in France as a lack of continued interest in the advancement of the program by the US NSF.

Leinen said that these comments are disturbing and suggest that JOIDES needs to improve its image. She suggested that a subcommittee be formed to develop strategies to help with the renewal efforts. Malpas said that an effort should be made to educate others about what the successes of ODP have been and the directions for the future; something similar to the NSB presentation. This group should be sent to the member country funding agencies and other geoscience initiatives. Brass said a ringing endorsement of ODP from EXCOM is needed.

<u>PCOM Consensus</u>

> PCOM was in consensus that a small *ad hoc* subcommittee be formed to aid the renewal process by developing strategies for generating excitement and publicity about the scientific advancements and technological achievements of ODP, coordinating presentations in the partner countries, countering criticism, identifying and strengthening weak points, and improving the image that ODP projects outside of the marine geoscience community.

Members of the subcommittee are J. Austin (chairman), M. Leinen, J. Malpas, R. Moberly, N. Pisias, and possibly a senior German geoscience administrator.

In connection with the letter by Robinson, Malpas suggested that the thematic approach will lead to more-sustained programs in one location lasting until a particular problem is solved.

Austin suggested that the issue of non-JOIDES Institutions having representation on PCOM be referred to the subcommittee for discussion with EXCOM.

849 Membership Changes on JOIDES Panels

Membership on the various JOIDES panels was reviewed and the following actions were taken.

LITHP Mark Zoback is to be invited to join the panel (alternate D. Moos) as the replacement for K. Becker with expertise in heat flow and downhole measurements. S. Humphris is to be asked to serve as the new chairman of the panel to replace R. Batiza.

OHP PCOM agreed to allow OHP to have 16 members for the fall meeting by asking A. Hine, J. Parrish (alternate L. Pratt) and John Barron to join the panel (assumes that Eric Barron has resigned). OHP will revert to 15 members after replacing W. Berger and D. Kent when they rotate at the end of 1990. G. Wefer will be the new member from the FRG. PCOM asked that for replacements, persons with expertise in the Mesozoic be considered for appointment by the non-US members.

SGPP P. Froelich and M. Goldhaber are scheduled to rotate at the end of 1990. Possible replacements were discussed by SGPP, but no nominations were forwarded to PCOM and no actions were taken at this meeting.

TECP Eldridge Moores is to be asked to accept the chairmanship of the panel after the Fall meeting when Ian Dalziel will be stepping down. Jan Behrmann will be replacing Karl Hinz for the FRG.

DMP D.M. Williams of Mobil Development and Research Corporation in Dallas, TX is to be invited to join the panel.

IHP Patty Fryer (new system of Results preparation) and Woody Wise (older system of Results preparation) are to be asked to join IHP as two recent Co-Chief Scientists. The Co-Chief positions will rotate more frequently, deepending on the rate of publication.

PPSP No actions taken. Lou Garrison will be serving on the TAMU safety panel after his retirement as Deputy Director of ODP.

SMP Hugh Jenkyns will see if Ellen Thomas can be supported by the UK as a member-at-large to the panel. [UK has agreed to support Thomas as a member-at-large.]

SSP Ann Trehu is to be asked to join the panel (Greg Moore is the alternate).

TEDCOM No requests and no actions taken. TEDCOM does endorse the attendance of liaisons from the thematic panels at future TEDCOM meetings.

PCOM Motion

PCOM accepts the slate of persons nominated to serve on panels. (Motion Brass, second Leinen)

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

Since Central and Eastern Pacific Detailed Planning Group did such a good job updating the Third CEPAC Prospectus and in addition PCOM decided not to use a DPG to prepare the Prospectus for FY92 Drilling, the CEPDPG was disbanded with the thanks of PCOM to the chairman D. Rea and all those who have served on this former regional panel and DPG.

PCOM Motion

PCOM disbands the Central and Eastern Pacific Detailed Planning Group. (Motion Langseth, second Brass)

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

In terms of its own disciplinary balance, PCOM noted that the area of sedimentary geochemistry is losing expertise due to the rotation of M. Kastner and the imminent departure of G. Brass. J. Austin will talk to A. Maxwell about writing a letter to US EXCOM members reminding them that this should be kept under consideration when appointing new PCOM members.

PCOM liaisons to meetings this summer will be: Langseth to the Cascadia DPG meeting; Cowan to the DMP meeting; and Watkins to the SSP meeting.

Membership of Joint Liaison Groups

The following JOIDES panel members are to be invited to be members of Joint Liaison Groups.

Liaison Group with the Federation of Digital Seismic Networks

Mike Purdy, Co-Chairman (Woods Hole) member of TECP

Jim McClain (Univ. California at Davis) member of LITHP

Liaison Group with InterRIDGE

Kim Klitgord, Co-Chairman (USGS) member of TECP

Jason Phipps-Morgan (Mass. Instit. Technology) member of LITHP

Liaison Group with Nansen Arctic Drilling Program

Decision deferred to the August PCOM meeting.

PCOM Motion

PCOM accepts the slate of persons nominated to serve on the Joint Liaison Groups. (Motion Leinen, second Brass)

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

850 Miscellaneous New Business

Burden on Panel Chairmen

The amount of work placed on the chairmen of the thematic panels has begun to have serious consequences, one chairman has resigned and two others have indicated that they will be resigning in the next year. There is a lot of time-consuming work involved in reviewing proposals, preparation of the reviews, minutes, white papers, letters to PCOM, etc. Panel chairmen have been complaining that their personal scientific investigations have been suffering from the time commitments to JOIDES. The JOIDES structure has been through an exceptional period of change during the past two years, previously regional panels took some of the load of reviewing proposals and devising drilling strategies.

Leinen suggested that PCOM could be more liberal in forming DPGs to do the detailed planning. Cowan said that the reviewing process will always take a lot of time and effort. Brass suggested that the load might improve now that global planning has been done once. Austin said that he could foresee a continuation of the heavy reviewing and administrative loads placed on the panel chairmen. This is especially a concern for those on "soft money" who support JOIDES work at the expense of their own science. Brass said that it should not be the burden it was this past year. Langseth suggested that as the panels sharpen up their white papers and improve the reviewing process, they will become more efficient.

Austin suggested that a new set of guidelines for the preparation of proposals needs to be prepared, so that more mature proposals are submitted and the panels will not have to spend as much time soliciting more information. Crawford said that there have been a new set of guidelines published, which require an abstract and a summary of the proposed drilling. Leinen said that the letters sent to the proponents from the panels should specify what improvements are needed in order for the proposal to be considered again.

Leinen suggested that part of the problem is that panel decisions come up again and again for additional review at PCOM. Panels must continuously resell the science to PCOM after having once had it accepted. PCOM needs to stand by its decisions or if it changes them, provide compelling reasons. Brass said that PCOM makes the final decisions based on advice from different panels as well as its own perspective; it may not be possible to justify PCOM decisions for each individual panel. Austin felt that PCOM needs full accountability for its decisions.

Lancelot suggested that some method other than just minutes is needed to get the thematic panel chairmen involved in developing the program plan. Austin said that the panel chairmen deserve more than they are now getting.

GPS Station on Sabine Bank

PCOM discussed the letter from F.W. Taylor about placement of a Global Positioning Station on Sabine Bank to establish plate convergent rates. It was noted that the goals of this experiment would tie-in with the scientific goals of the Vanuatu drilling, however, since PCOM does not evaluate these outside proposals against one another, it cannot provide an endorsement. If the project is funded, PCOM thinks the science results would be of use for the Vanuatu drilling.

Distribution of JOIDES Proposals

Should a proposal that is not yet placed on the drilling schedule be sent from the JOIDES Office to anyone requesting a copy? Present practice is to tell the requester to ask the proponent directly. Presumably, once the proposal is "accepted" (in the Program Plan), it can be made public as with other proposals to public funding agencies.

Brass said that he was concerned about having proposals sent out without the knowledge of the proponents, because of the potential problems with unauthorized use of the data or ideas for other proposals. He suggested that anyone outside of the JOIDES structure requesting proposals that were not in the schedule should request them from the proponents. Once they are under consideration for drilling, as in a prospectus, they can get wide distribution. von Rad said he thought this was agreeable.

PCOM Consensus

> Once a drilling proposals is under active consideration for drilling it will become publicly available; prior to this, anyone outside of the JOIDES structure will have to make their requests for proposals directly to the proponents.

Multi-shot Orientation Tool

One of the recommendations of the Annual Co-Chiefs meeting was that the multi-shot orientation tool be run in all APC holes at low latitudes to improve the usefulness of cores for reversal stratigraphies. The time requirements are minimal, being about 5-10 minutes for an APC section. Langseth endorsed the suggestion and suggested that this will improve the scientific value of cores.

PCOM Consensus

> PCOM recommends that the multi-shot orientation tool be run at APC holes at low-latitude sites. At sites with multiple APC holes, decisions about additional runs beyond the first one will be made onboard.

Valu Fa Ridge as an Alternate Site

LITHP had suggested that the proposal for drilling ore deposits in the back-arc Valu Fa Ridge be considered for a back-up site during drilling on Leg 135 in the Lau Basin. This site was not considered when the prospectus was prepared and would represent another objective for a leg that is already full. Approximately 15-20 days of extra time would be required to drill at this site. Brass suggested that it was an acceptable alternate site, if for some reason the Co-Chiefs want another alternate site.

Routine Blind Whole-Round Sampling of Cores

SGPP has questioned the necessity of routinely collecting and freezing blind whole-round core samples for future organic geochemistry studies. SGPP has suggested that a study be made of the numbers and kinds of research programs done with these cores. PCOM requests that the Science Operator supply statistics on the usage of these cores for consideration by SMP. Leinen said that additional expertise in organic geochemistry may be needed. Moberly said that this can be covered by a request for a guest to attend the meeting.

PCOM Consensus

SMP in consultation with SGPP and the Science Operator will draft a policy statement on the routine blind sampling of whole-core cylinder rounds for organic geochemical analysis.

851 Future Meeting Schedule

The next meeting will be the 1990 Summer PCOM meeting in La Jolla from 14-16 August 1990 and hosted by Scripps. It is unknown at this time if a field trip can be arranged.

The 1990 Annual PCOM meeting will be hosted by the Hawaii Institute of Geophysics in Kailua-Kona, Hawaii from 28 November to 1 December 1990. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 27 November. A field trip prior to the meeting is possible if there is sufficient interest.

The 1991 Spring PCOM meeting has been changed to the University of Rhode Island from 23-25 April 1991.

The 1991 Summer PCOM meeting will be hosted by the FRG in Hannover from 20-22 August 1991. There will be a two day field trip after the meeting, which will possibly include stops in East Germany.

The 1991 Annual PCOM meeting has been changed and will now be hosted by the University of Texas at the Thompson Conference Center on the Austin

campus from 4-7 December 1991. The PCOM meeting will be preceded by the Panel Chairmen's meeting on Tuesday, 3 December.

The 1992 Spring PCOM meeting will be hosted by either Oregon State University or the JOI Office in Washington. Dates and venue are to be decided at the August PCOM meeting.

852 Conclusion of the Meeting

The Planning Committee thanked Yves Lancelot and Martine Cheminee for their efforts arranging the PCOM Meeting, the Reception, and the field trip. ODP France, the Université Pierre et Marie Curie, and Société Géologique de France were thanked for their hospitality.

The Planning Committee expressed by acclimation its appreciation of the efforts of Lou Garrison on behalf of ODP. Moberly said that we all recognize that Lou has been instrumental in the success of ODP, and wish him well in his retirement.

The 1990 PCOM Spring Meeting adjourned at 4:45 PM.

APPENDICES TO 24-26 APRIL, 1990 PARIS PCOM MINUTES

A FY91 Special Operating Expenses

B Items Related to the Science Operator's Report

C Fifth Annual Co-Chief Scientists' Review Meeting - List of Recommendations

D Items Related to the Wireline Logging Operator's Report

E Development Engineering Schedules

F Operational Plans for Engineering 3B at the EPR

G List of Program Rankings by Thematic Panels

HANDOUTS DISTRIBUTED AT THE PARIS PCOM MEETING

Minutes of the 7-9 March, 1990 Information Handling Panel Meeting

Minutes of the 9-10 April, 1990 Site Survey Panel Meeting

Letter from Earl Davis about the 5-7 April, 1990 EPRDPG Meeting

NSF Report to the PCOM meeting

Engineering Development Status Report

Fifth Annual Co-Chief Scientists' Review Meeting - List of Recommendations

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Table ES-3 Summary of FY91 Special Operating Expenses

TAMU		
1.	$ 86,000	Publication: production of two additional volumes of *Proceedings*
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**

ODP OPERATIONS SCHEDULE

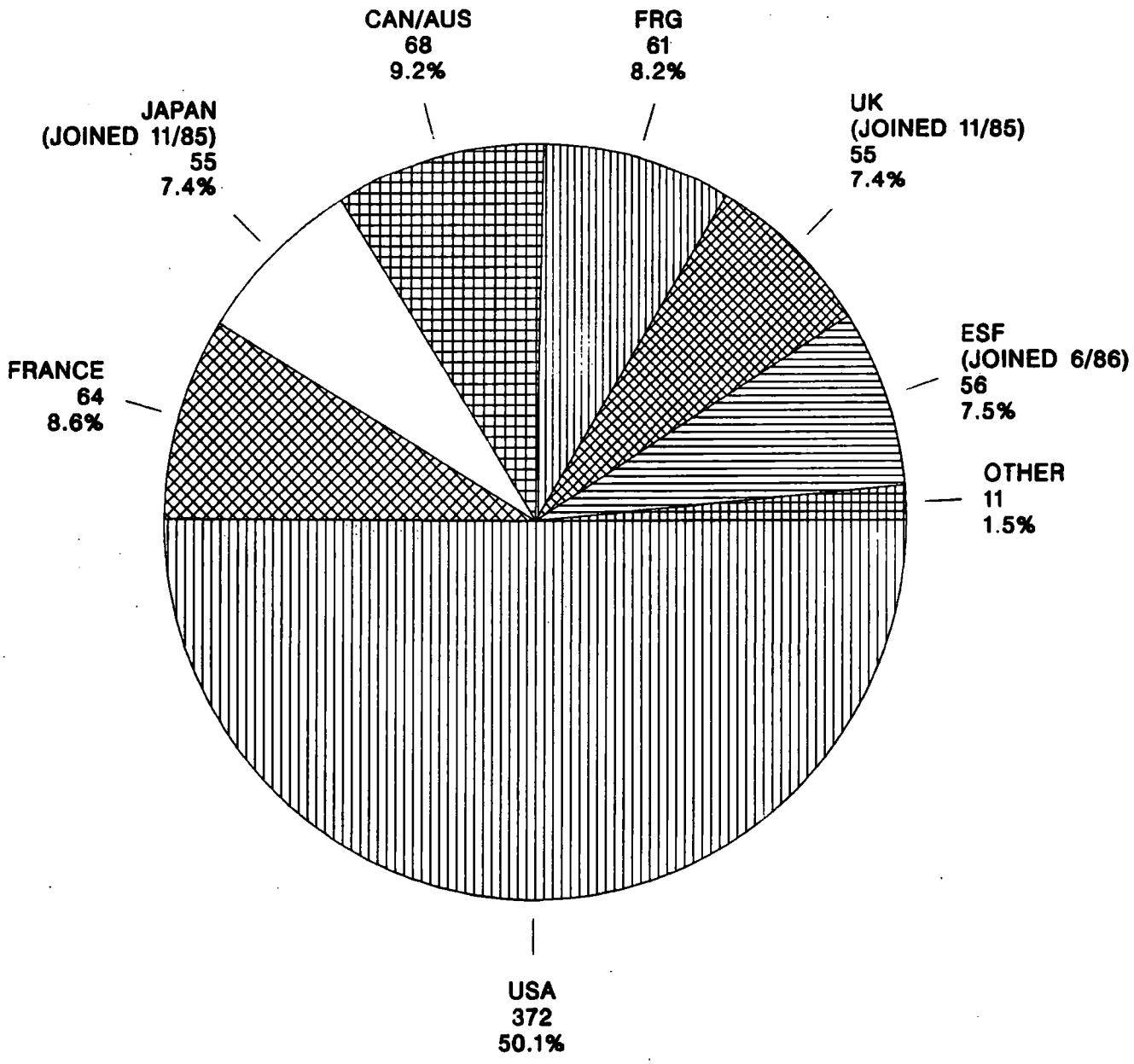
Leg	Cruise Dates	Days at Sea	In Port
131 - Nankai	4/01 - 6/02/90	62	Pusan 6/2-06/90
132 - Engineering 2	6/07 - 8/05/90	59	Guam 8/05-09/90
133 - NE Australia	8/10 - 10/11/90	62	Townsville 10/11-15/90
134 - Vanuatu	10/16 - 12/17/90	62	Suva 12/17-21/90
135 - Lau Basin	12/22/90 - 2/18/91	58	Suva 2/18/91 (Crew Change)
136 - Transit	2/19 - 3/01/91	10	Honolulu 3/01-03/91
OSN-1	3/04-18/91	14 (12 on site)	Honolulu (1/2 day)
Engineering 3A	3/18-4/21/91	34 (15 on site)	Panama 4/22-26/91
		62 days total	
137 - E. Equat. Pacific	4/27-6/26/91	60	San Diego 6/26-30/91
138 - Sedimented Ridge 1	7/01 - 9/02/91	63	Victoria 9/02-06/91
139 - Eng. 3B or 504B	9/07 - 11/06/91	60	Panama 11/06-10/91

Revised 5/4/90

Appendix B

SHIPBOARD PARTICIPANT TALLY
LEGS 101 - 130

(January 1984 - March 1990)



TOTAL 742 PARTICIPANTS
(Does not include scientists on Leg 124E)

Distribution Dates of ODP Volumes—Fiscal Year 1990

Numbers indicate weeks in production after receipt of final copy/months post-cruise for distribution, as of January 15, 1990.

VOLUMES	OCT	NOV	DEC	JAN	FEB	MARCH	APRIL	MAY	JUNE	JULY	AUG	SEPT
Initial Reports												
120		24/19										
121		41/18										
122				34/17								
123							/18					
124/124E							/15					
125								/13				
126								/11				
127											/12	
128												/10
Scientific Results												
104	38/50											
105	35/48											
106/109				28/49								
107					38/48							
108			23/44									
110							/44					
111			28/38									
112								/40				
113										34/40		
114												/40
115												/38
116												/37

Initial Reports, average weeks in production after receipt of final copy: 33 weeks.

Scientific Results, average weeks in production after receipt of final copy: 40 weeks.

Distribution Dates of ODP Volumes - Fiscal Year 1991

	Initial Reports Volume	Date to Printer	Date Distributed	Months post-cruise	*Scientific Results* Volume	Date to Printer	Date Distributed	Months post-cruise
OCTOBER								
NOVEMBER								
DECEMBER					117 118	10-90 10-90	12-90 12-90	38 36
JANUARY					119 114	11-90 11-90	1-91 1-91	37 42?
FEBRUARY	129	12-90	2-91	13				
MARCH	130	1-91	3-91					
APRIL					120	2-91	4-91	36
MAY	131	3-91	5-91		121	3-91	5-91	35
JUNE								
JULY	132	5-91	7-91		122	5-91	7-91	33
AUGUST					123	6-91	8-81	33
SEPTEMBER	133	7-91	9-91					

March 30, 1990

PROCEEDINGS VOLUMES for 1990 Fiscal Year Volumes to Press

Smaller Page Size

COMPLETED		SCHEDULED	
Volume	Date	Volume	Date
104 SR	October 1989	127 IR	August 1990
105 SR	October 1989	128 IR	September 1990
120 IR	December 1989	115 SR	September 1990
121 IR	December 1989	116 SR	September 1990
108 SR	December 1989		
111 SR	December 1989		
106/109 SR	January 1990		
122 IR	January 1990		
107 SR	February 1990		
123 IR*	April 1990		
110 SR*	May 1990		
112 SR*	May 1990		
124/124E IR*	May 1990		
125 IR*	May 1990		
126 IR*	May 1990		
113 SR*	July 1990		

*** In press as of April 1990.**

3-30-90

Appendix C

FIFTH ANNUAL CO-CHIEF SCIENTISTS' REVIEW WORKSHOP

LIST OF RECOMMENDATIONS

SCIENCE OPERATIONS

Pre-cruise Planning

1. Discuss shipboard scientific staffing needs with Co-Chief Scientists as early in cruise planning process as possible, so they and ODP both have a firm idea about the kind of scientific expertise necessary for the cruise at the time scientists are expressing interest in applying to participate.

2. Encourage cruise-specific applications from potential shipboard scientists by revising application forms to require more information from applicants regarding their cruise-specific scientific interests.

3. Widely disseminate short (1 page?) summaries of upcoming cruises as soon as PCOM schedules them, to encourage applications from scientists who might not otherwise hear of the opportunity. [Suggestions included Science News, Geotimes, etc.]

4. Increase flexibility in numbers of scientists that comprise shipboard scientific team, to permit shipboard parties smaller than 24 if scientifically or logistically desirable.

5. Invite proponents as Co-Chief Scientists whenever possible.

6. Ensure Co-Chief Scientists talk directly with ODP Engineering and Operations personnel early in the cruise planning process (i.e., prior to the pre-cruise Co-Chiefs' meeting) to discuss anticipated drilling problems and needs specific to their leg and to provide information about basic drilling operations to first-time Co-Chiefs.

7. DMP should better scientifically justify their logging recommendations and get them into the planning process earlier, so that their recommendations can be acted upon by PCOM at the time PCOM initially plans a cruise.

8. Encourage PCOM to nominate specific liaisons from relevant thematic panels to discuss cruise-related panel priorities and concerns with Co-Chief Scientists on an ODP cruise, rather than send a "PCOM watchdog" to the pre-cruise Co-Chiefs' meeting at ODP/TAMU.

9. Add disclaimer to future cruise scientific prospectuses that they are "general plans" for drilling strategies on a leg, based on pre-cruise information.

Shipboard Equipment and Procedures

1. Compile a "Co-Chiefs' Guide to the Underway Lab" with such critical information as beacon deployment procedures, a diagram of the position of the eel vs. the navigation antenna, etc.

2. Acquire a SESP correlator for the 3.5-kHz profiler.

3. Investigate running SIOSEIS on the shipboard VAX system and increasing plotting device options.

4. Acquire capability for real-time display of satellite, GPS, Loran, and DR navigation on monitor and flat-bed plotter in U/W lab.

5. Hold workshop of paleomagnetists who have recently sailed on the Resolution to discuss the paleomagnetics shipboard facilities, procedures, and policies, and to make recommendations to ODP and SMP for improvements.

6. Give more complete information to oncoming paleomagnetists about the status of the paleomagnetics facilities onboard ship (e.g., lab shielding, labstack cleanliness, guidelines for and flexibility in what measurements are made, etc.)

7. Improve belt system on shipboard cryogenic magnetometer.

8. Run the multishot orientation tool in all APC holes for reversal stratigraphies.

9. Improve care given preserving orientation of core liners and core catchers to solve core orientation problems observed in paleomagnetics data.

10. Improve paleomagnetics software to allow azimuthal orientation data to be saved and to allow deconvolution.

11. Look into role supersaw plays in contaminating cores for paleomagnetics analyses and, as necessary, make modifications to reduce this contamination to acceptable levels.

12. Move core rack in core splitting room so that cores are stored in less contaminated area from a paleomagnetics point of view.

13. After Leg 131, hold workshop of physical properties specialists who have recently sailed on the Resolution to discuss the physical properties shipboard facilities, procedures, and policies, and to make recommendations to ODP and SMP for improvements.

14. Give more complete information to oncoming physical properties specialists about the status of the physical properties facilities and procedures onboard ship.

15. Improve weighing facilities in the physical properties laboratory.

16. Augment HARVI to include headings relevant for the description of metamorphics.

17. Improve ship-to-shore and shore-to-ship communications by (a) solving FAX equipment limitations onboard ship and allowing scientists to communicate directly with their home institutions via FAX; (b) increasing the number of PMAIL exchanges made per week; and, (c) asking non-U.S. JOIDES offices to distribute and collect PMAIL within their countries, to reduce time it takes to get a PMAIL letter in the hands of the receiver.

SCIENCE SERVICES

Curation

1. Improve usefulness of completed sample request forms by (a) revising forms to require more information from requestees regarding the cruise-specific goals of their proposed research, and (b) providing requestees with completed example forms more relevant to their disciplines.

2. Solve continued perception of inflexibility in curatorial policies and procedures onboard ship.

3. Augment master sampling report produced at end of the cruise to (a) include information about what scientific studies will (and won't, if applicable) be conducted on samples collected by each investigator, and (b) designate which studies must be completed for each investigator to fulfill his/her cruise obligations.

Publications

1. Relax policy of using full core and section identifiers throughout ODP publications, if meaning can be made clear with an abbreviated identifier.

2. Work with Geotimes to return to pre-Leg 128 publication format that permitted a more scientific article than they currently prefer.

3. The initial post-cruise meeting should include at least one person from each discipline "critical" to the cruise; all other shipboard scientists should submit their post-cruise corrections to the site chapters to the appropriate initial post-cruise meeting participant prior to the meeting.

ENGINEERING/OPERATIONS

1. Ensure that the Mesotech sonar is ready, in terms of both equipment and training, to serve as a backup for reentry operations.

2. Ensure that effective communication between Operations Superintendent and SEDCO drilling personnel exists at all times onboard ship.

TECHNICAL/LOGISTICS

1. Continue striving to maintain experience profile of shipboard technical staff.

2. Use technical support to provide help to scientific party in creating graphics for scientific reports.

LOGGING

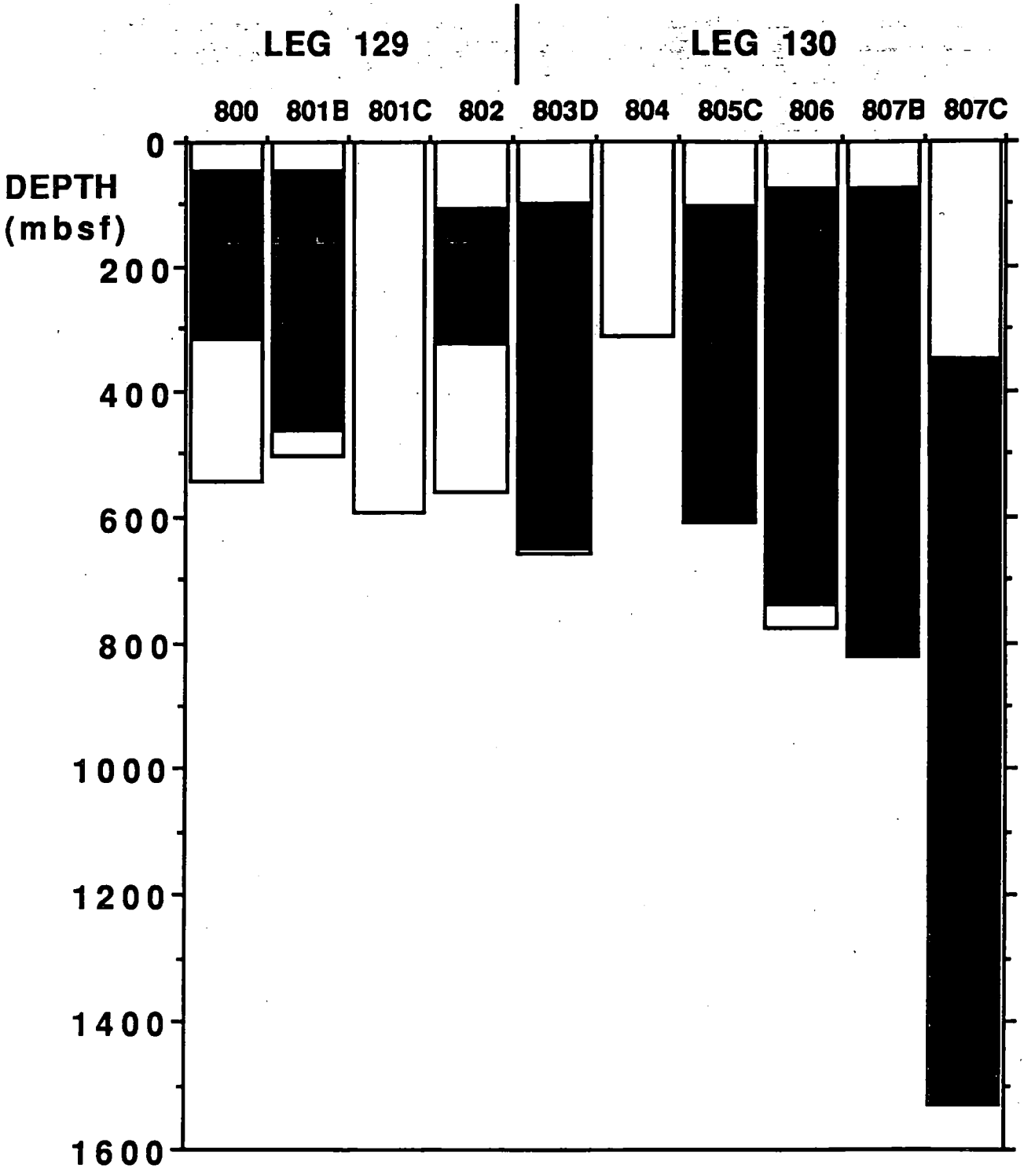
1. Set up early dialogue between the Borehole Research Group and the Co-Chief Scientists, initiated by a BRG representative, regarding expected hole conditions at proposed sites.

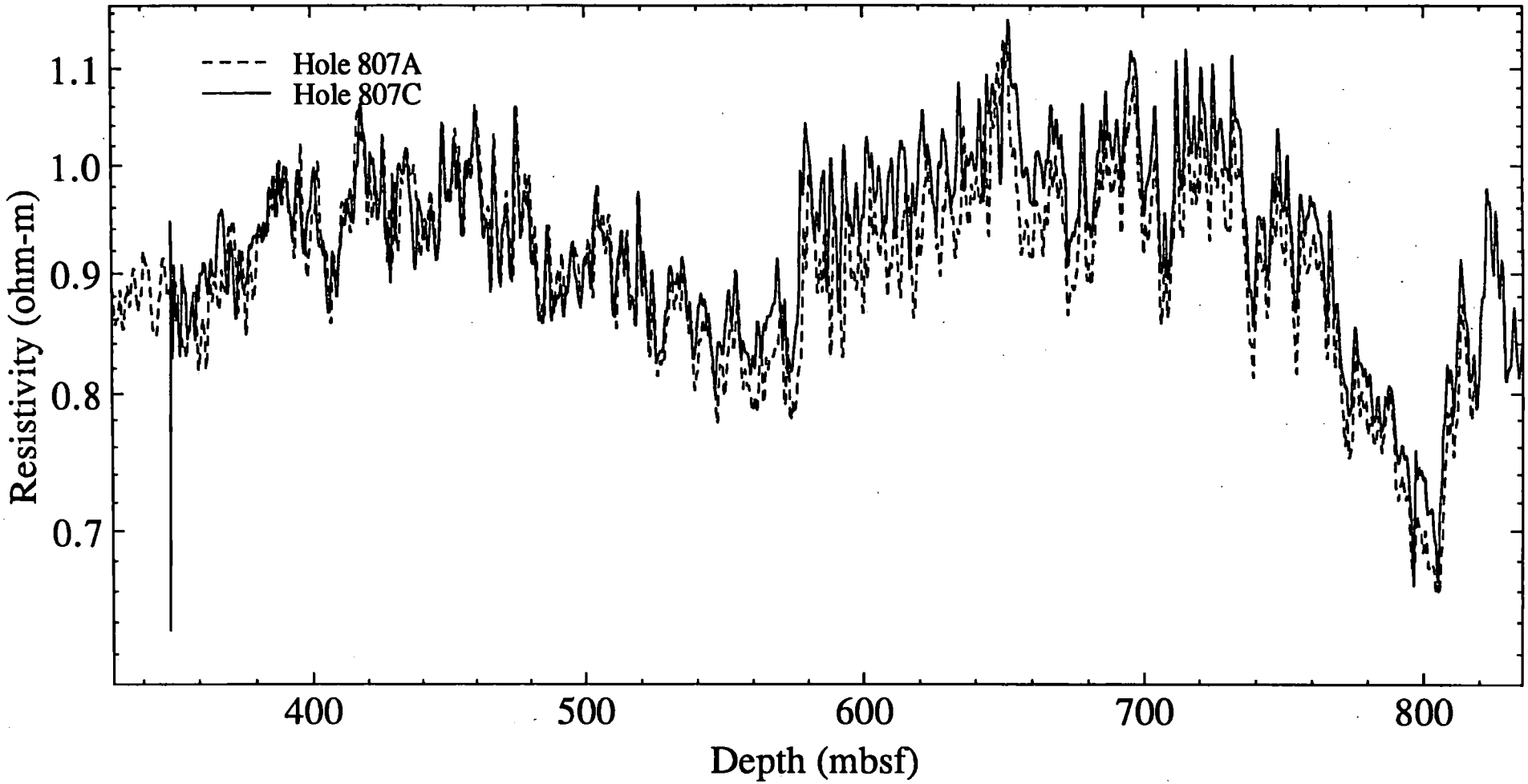
2. Apprise Co-Chief Scientists of the scientific value of completing double Formation Microscanner (FMS) runs whenever hole conditions permit.

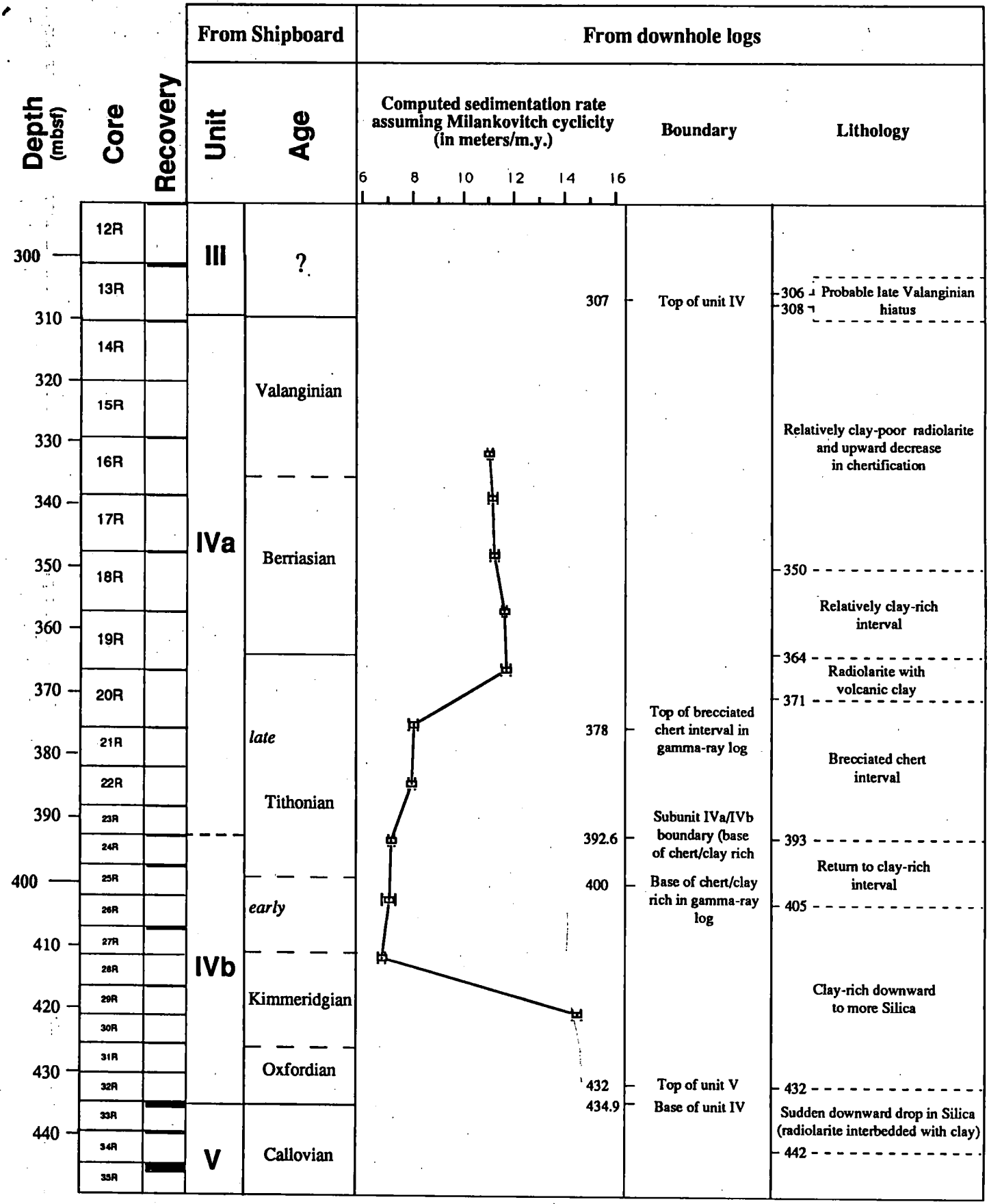
OTHER

1. Send recommendations from this Co-Chiefs' review workshop to Co-Chief Scientists on upcoming ODP cruises.

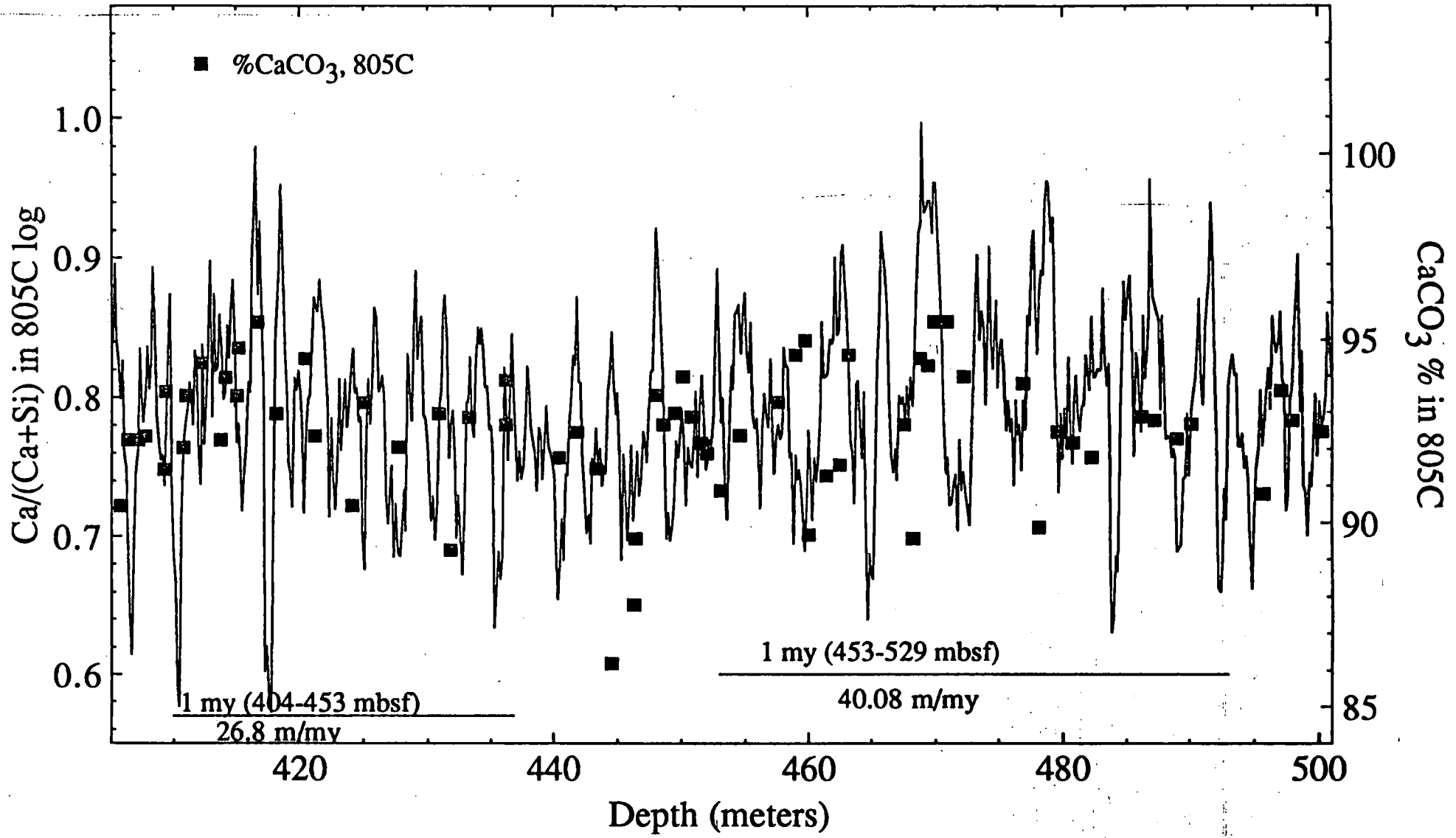
Appendix D


LEG 129
LEG 130
800
801B
801C
802
803D
804
805C
806
807B
807C
DEPTH (mbsf)
0
200
400
600
800
1000
1200
1400
1600

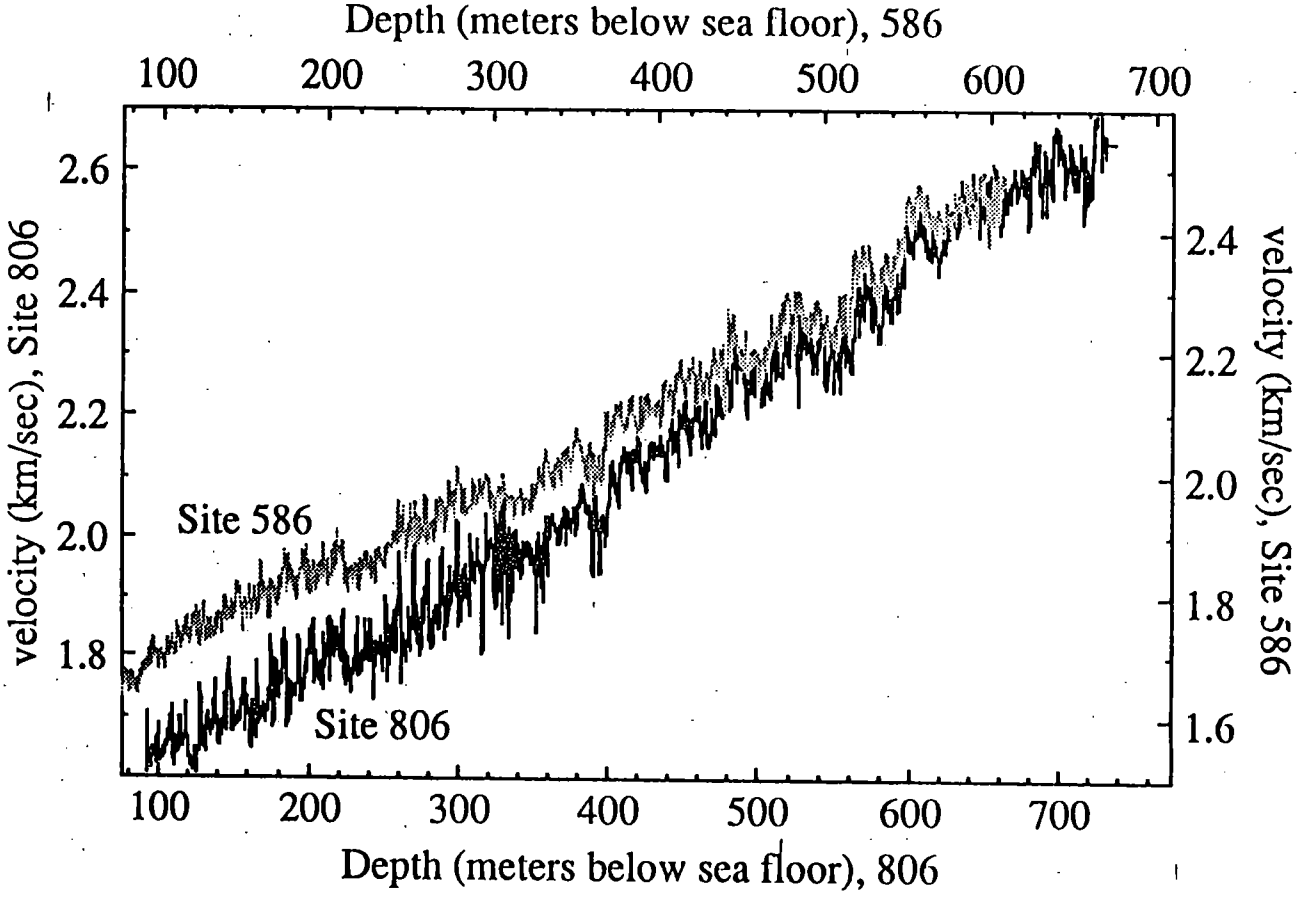

Hole 807A
Hole 807C
Resistivity (ohm-m)
1.1
1.0
0.9
0.8
0.7
400
500
600
700
800
Depth (mbsf)

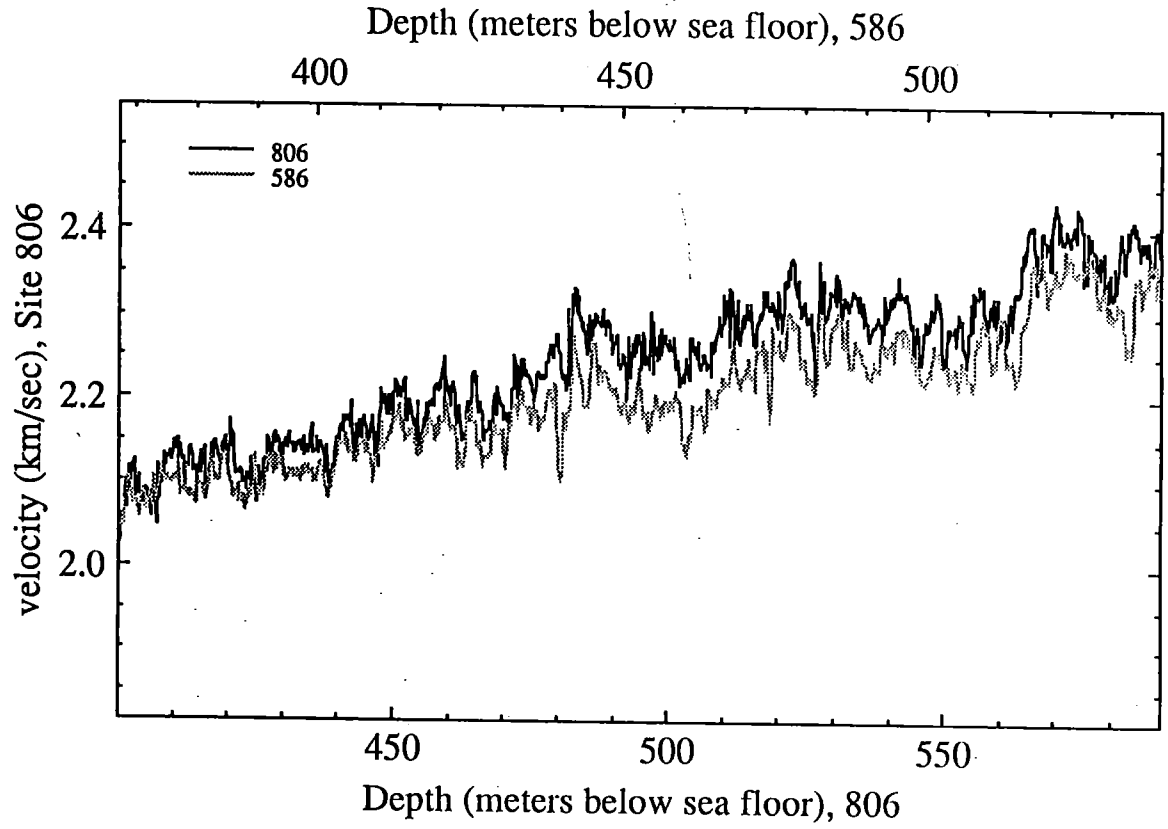

From Shipboard
From downhole logs
Depth (mbsf)
Core
Recovery
Unit
Age
Computed sedimentation rate assuming Milankovitch cyclicity (in meters/m.y.)
6 8 10 12 14 16
Boundary
Lithology
12R
13R
14R
15R
16R
17R
18R
19R
20R
21R
22R
23R
24R
25R
26R
27R
28R
29R
30R
31R
32R
33R
34R
35R
300
310
320
330
340
350
360
370
380
390
400
410
420
430
440
III
?
IVa
Valanginian
Berriasian
late
Tithonian
early
IVb
Kimmeridgian
Oxfordian
V
Callovian
307
Top of unit IV
306
308
Probable late Valanginian hiatus
Relatively clay-poor radiolarite and upward decrease in chertification
350
Relatively clay-rich interval
364
Radiolarite with volcanic clay
371
378
Top of brecciated chert interval in gamma-ray log
Brecciated chert interval
392.6
Subunit IVa/IVb boundary (base of chert/clay rich
393
400
Base of chert/clay rich in gamma-ray log
Return to clay-rich interval
405
Clay-rich downward to more Silica
432
Top of unit V
434.9
Base of unit IV
432
Sudden downward drop in Silica (radiolarite interbedded with clay)
442

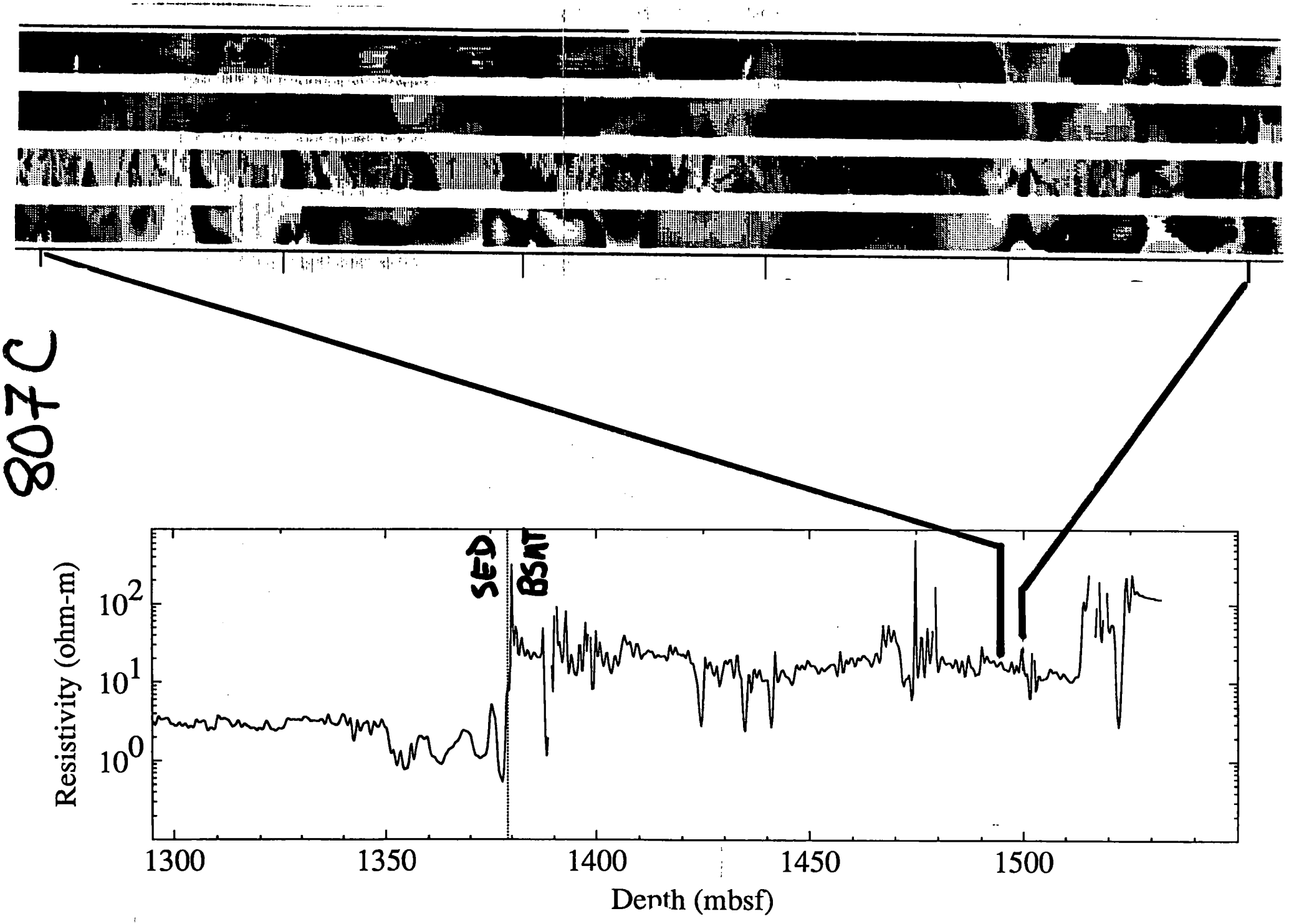
805


%CaCO3, 805C
1.0
0.9
0.8
0.7
0.6
Ca/(Ca+Si) in 805C log
100
95
90
85
CaCO3 % in 805C
1 my (404-453 mbsf)
26.8 m/my
1 my (453-529 mbsf)
40.08 m/my
420
440
460
480
500
Depth (meters)

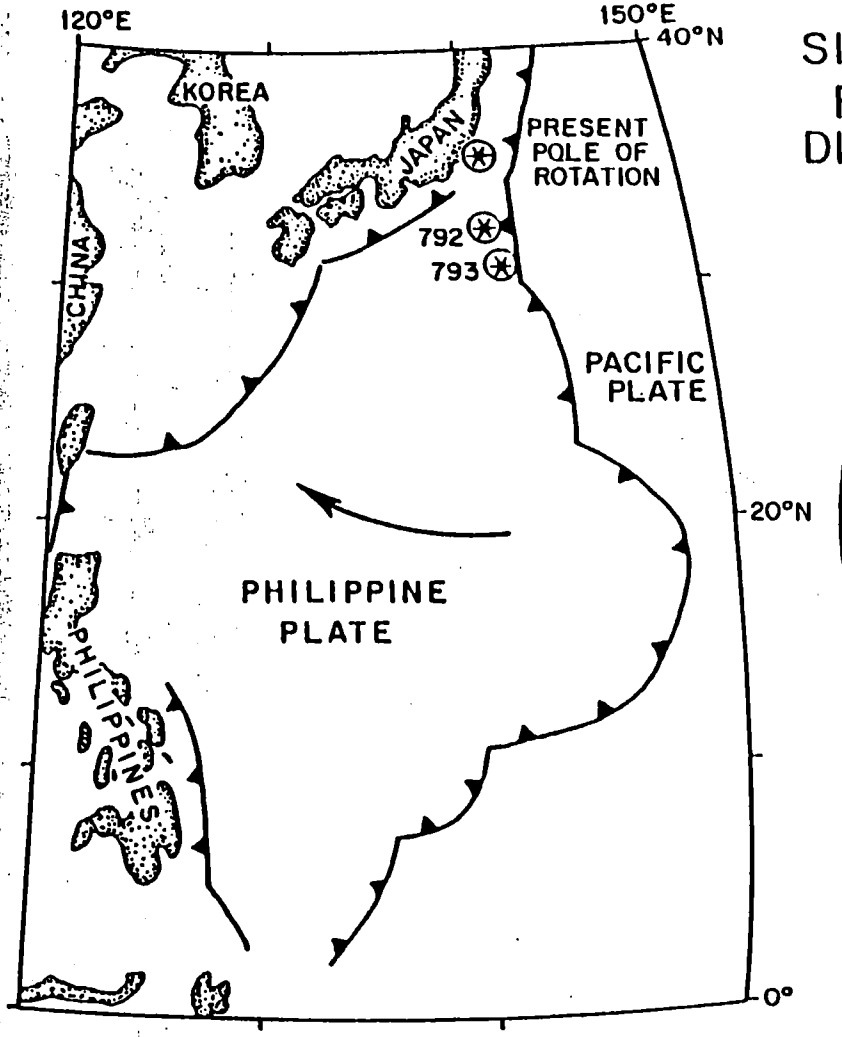
806B/586 comparison





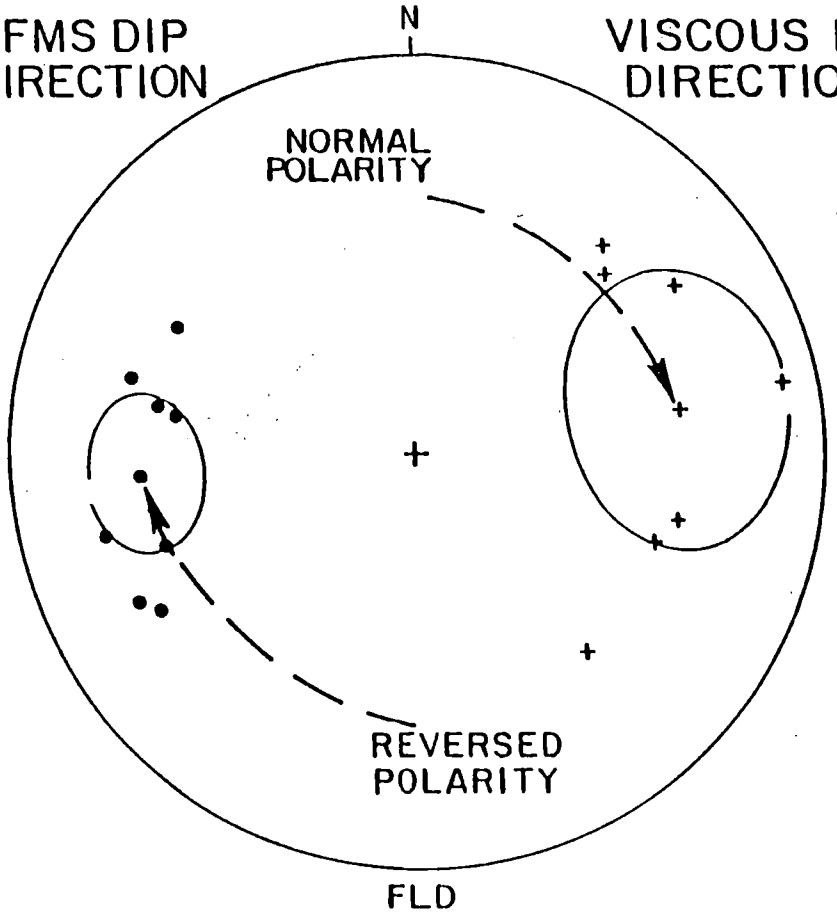

807C
SED
BSMT
10^2
10^1
10^0
Resistivity (ohm-m)
1300
1350
1400
1450
1500
Depth (mbsf)

PHILIPPINE PLATE MOTION FROM ORIENTED CORES MIDDLE OLIGOCENE



SITE 793
FMS DIP DIRECTION

SITE 792
VISCOUS MAG DIRECTION



ODP LEG 126

Downhole Measurement Milestones: Next 12 months

Leg	Location	Main Logging Objective	New ODP Technology
131	Nankai	fluids & structure	wireline packer?
132	Engineering 2	DCS logging feasibility	slimhole logging
133	NE Australia	1D → 2D	new SES
			shipboard FMS processing
			wireline packer?
134	Vanuatu	structural history	digital televiewer
			downhole reversal strat.?
135	Lau	back-arc crust	-
136	Engineering 3	504B crustal fluids	Sandia T & fluids
			permeability logging?
137	Sed. ridge hydro	sed. ridge hydrothermal	hole cooling

DEVELOPMENT ENGINEERING
'PROJECT' SCHEDULE

DATE APRIL 18, 1990

YEAR	1990						1991							1992		
TENTATIVE LEG NO.	131	132	133	134	135	???	136		137	138	139	140	141	142	143	144
MONTH	APR	JUN	AUG	OCT	DEC		FEB		APR	JUN	AUG	OCT	DEC	FEB	APR	JUL
OPERATING AREA	NANKAI	ENGINEER 2	N.E. AUSTRALIA	VANUATU	LAU BASIN		ENGINEER 3A (504B)	ENGINEER 3B (EPR)	SEDIMENT RIDGES I	E. EQUAT. PAC.	504B	EPR I	CHILE TRIP. JUNCTION I	CHILE TRIP. JUNCTION II	EPR 2	SEDIMENT RIDGES II
MOTOR DRIVEN CORE BARREL				$T_{(?)}$				$T_{(?)}$	■							
DIAMOND CORING SYSTEM		T	$T_{(?)}$		■?			T	■?							
VIBRA/PERCUSSION CORER		L	T	T					■							
DCS HIGH TEMP CORING (>250°C)								T	T	■?		■				
HARD ROCK CORE ORIENTATION				T_{RCB}	$T_{RCB\ DCS}$			T_{DCS}	■?							
SONIC CORE MONITOR			L	T_{RCB}	T_{RCB}				■							
MINI HARD ROCK GUIDE BASE		T			■?			■								
PRESSURE CORE SAMPLER (PHASE I)	T				■?											
DRILLING PACKER	T															
REENTRY CONE PLUG								T	■							
HIGH TEMP. FLUID SAMPLER								T	$T_{(?)}$		$T_{(?)}$	■				
HIGH TEMPERATURE LOGGER								T	$T_{(?)}$		$T_{(?)}$	■				
WIRELINE PACKER (BRG)	T															
CONICAL SIDE ENTRY SUB (BRG)			T	■												
GEOPROPS PROBE (KARIG)		L	$T_{(?)}$	$T_{(?)}$					■?							
LATERAL STRESS TOOL (MORAN)	T				$T_{(?)}$											
PRESSURE METER (MORAN)	L		$T_{(?)}$		$T_{(?)}$											

??? TENTATIVE BEYOND LEG 135 ???

L LAND TESTING

T DEVELOPMENT SEA TRIALS

■ ANTICIPATED OPERATIONAL

Appendix E

DEVELOPMENT ENGINEERING
'GENERIC' TECHNOLOGY REQUIREMENTS

DATE APRIL 18, 1990

YEAR	1990					1991							1992		
TENTATIVE LEG NO.	131	132	133	134	135	136		137	138	139	140	141	142	143	144
MONTH	APR	JUN	AUG	OCT	DEC	FEB		APR	JUN	AUG	OCT	DEC	FEB	APR	JUL
OPERATING AREA	NANKAI	ENGINEER 2	N.E. AUSTRALIA	VANUATU	LAU BASIN	ENGINEER 3A (504B)	ENGINEER 3B (EPR)	SEDIMENT RIDGES I	E. EQUAT. PAC.	504B	EPR I	CHILE TRIP. JUNCTION I	CHILE TRIP. JUNCTION II	EPR 2	SEDIMENT RIDGES II
FRACTURED CRUSTAL CORING		DCS			DCS(?) X		DCS				X			X	
INTERBEDDED CHERT/CHALK CORING		DCS													
INTERBEDDED SEDIMENT / VOLCANICS CORING				MDCB(?) X	DCS(?) X										
UNCONSOLIDATED FORMATION CORING (LOOSE SAND / TURBIDITES, ETC.)	X		VPC X	VPC(?) X				X	X			VPC	VPC		
DEEP CRUSTAL PENETRATION (1500 – 3000 m)						504B REPAIR				X				X	
DEEP SEDIMENTARY PENETRATION (1000 – 3000 m)	X		X	X				X	X			X	X		
HIGH TEMPERATURE CORING (>250°C)							DCS				X			X	X
ATOLL/GUYOT CORING		DCS	X												
PRESSURE CORE SAMPLING	PCS X								X						
BARE ROCK SPUD REQUIREMENT		MINI HRB					MINI HRB				X			X	
HARD ROCK ORIENTATION				SCM X	RCB		DCS			X	X			X	

??? TENTATIVE BEYOND LEG 135 ???

(SYSTEM) DEVELOPMENT TEST X REQUIREMENT

EPR / EWGR III LEG
DCS TIME ESTIMATES

I. OFF-AXIS HOLE — 25.2 DAYS

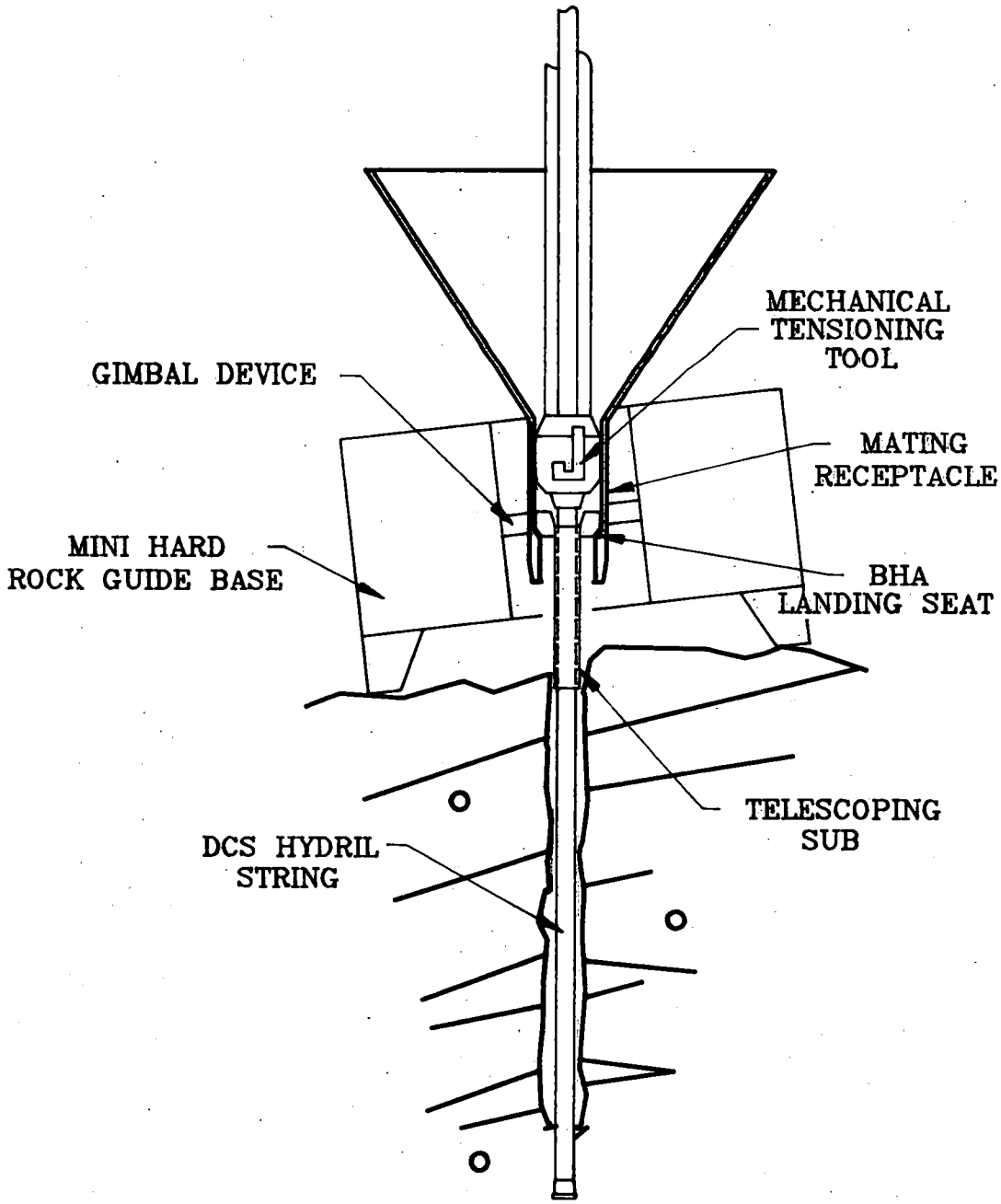
- 3000m WD
- PILOT HOLE TO 150m
- DIBHA TO 100m
- CORED INTERVAL: 100m - 200m bsf

II. ON-AXIS HOLE — 22.2 DAYS

- 2800m WD
- PILOT HOLE TO 100m
- DIBHA TO 50m
- CORED INTERVAL: 50m - 150m bsf

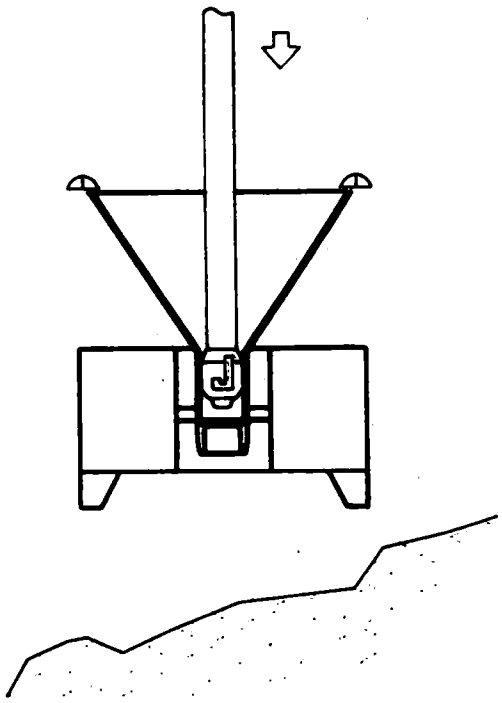
III. PLUS TRANSIT TIME: ~ 7.1D?

TOTAL DAYS ~ 55 DAYS

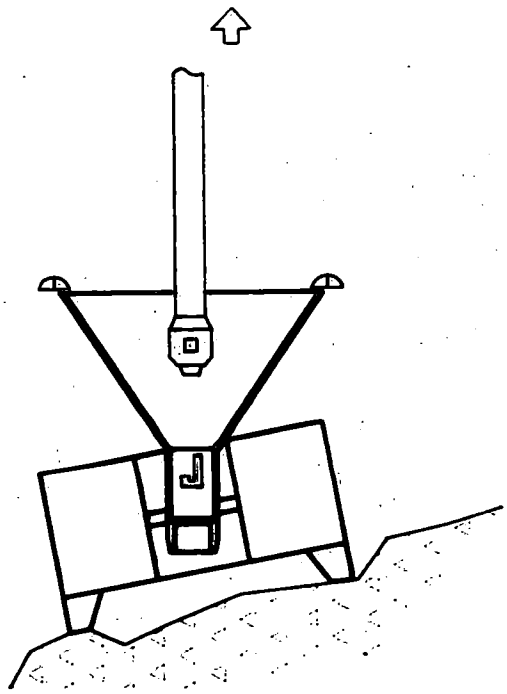


WEIGHTED MINI GUIDE BASE FOR BARE ROCK OPERATIONS
WITHOUT SETTING BHA

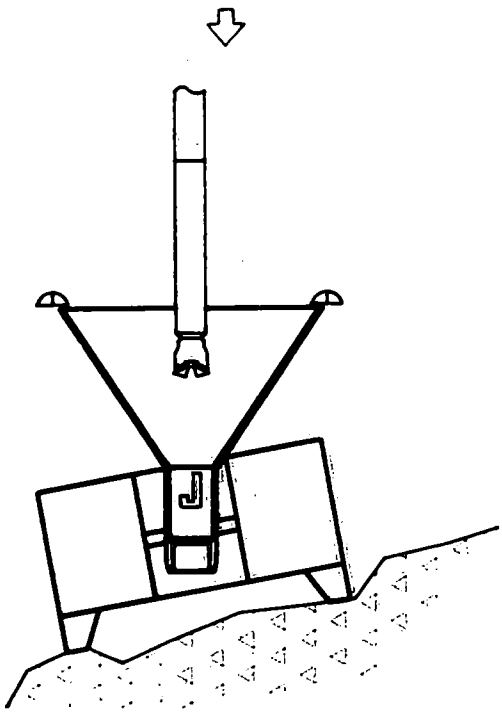
Figure A6



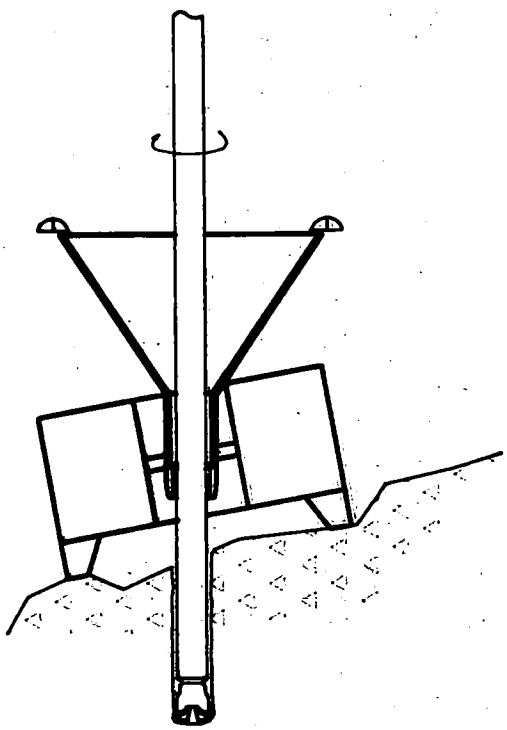
(1) LOWER MINI GUIDE BASE TO SEAFLOOR



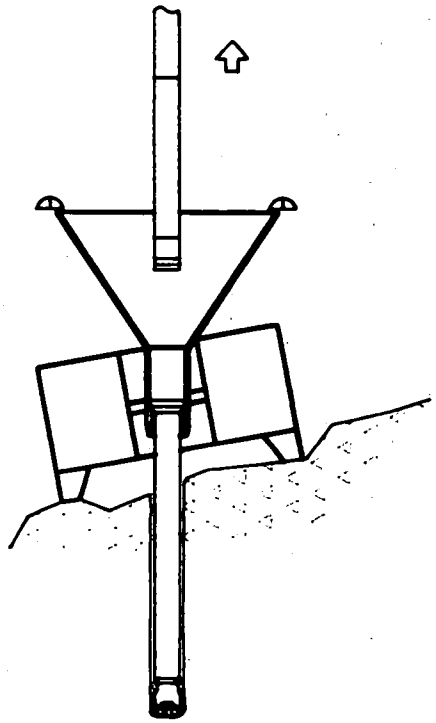
(2) UN-J AND REMOVE RUNNING TOOL



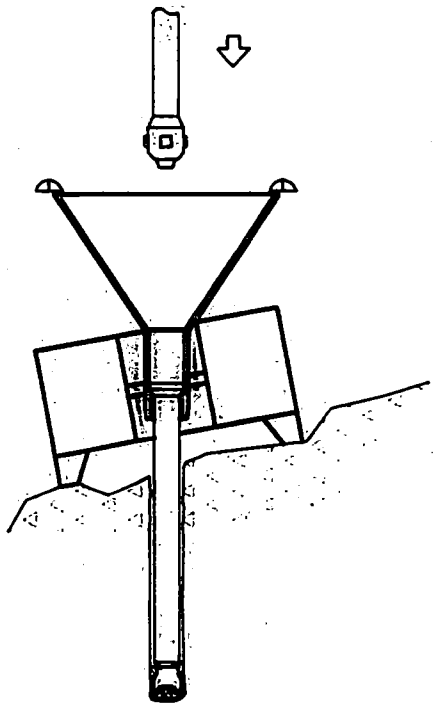
(3) RE-ENTER CONE WITH BHA ABOVE PDM



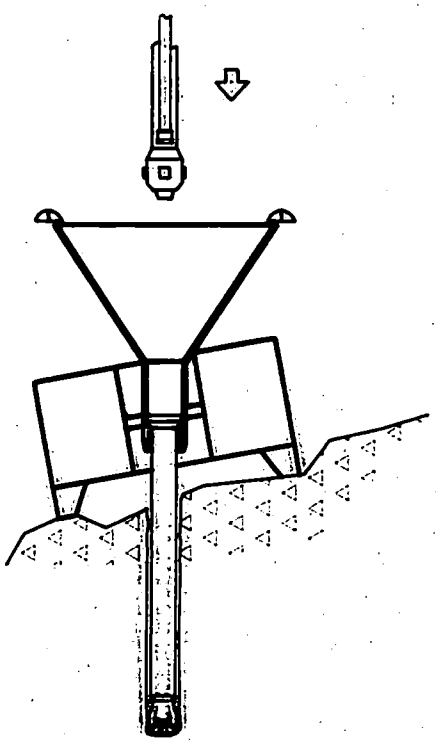
(4) DRILL IN BHA TO PRESET DEPTH



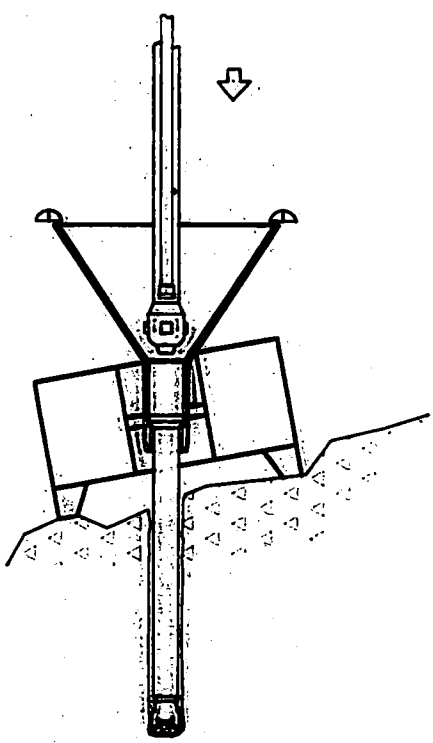
⑥ SPOT WITH CEMENT AND BACKOFF BHA BELOW PDM AND RETRIEVE STRING



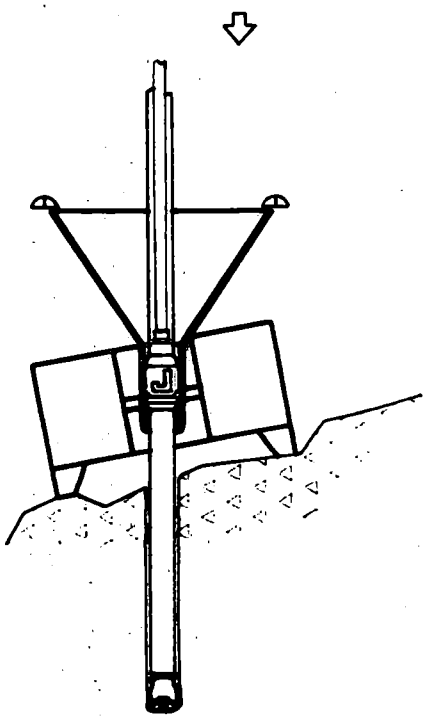
⑥ LOWER MECHANICAL TENSIONING DEVICE ABOVE RE-ENTRY CASING



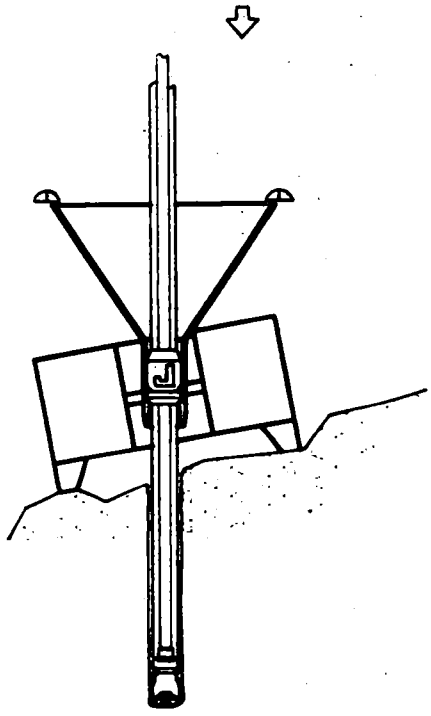
⑦ TRIP IN HYDRIL TUBING TO JUST ABOVE MECHANICAL TENSIONING DEVICE



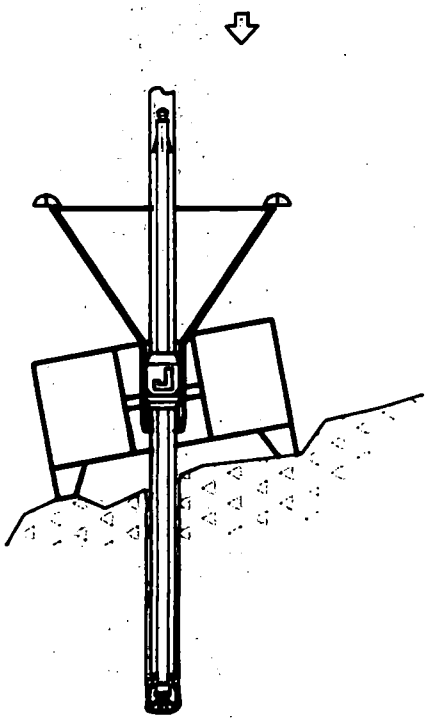
⑧ RE-ENTER HRB AND RUN IN WITH MECHANICAL TENSIONING DEVICE



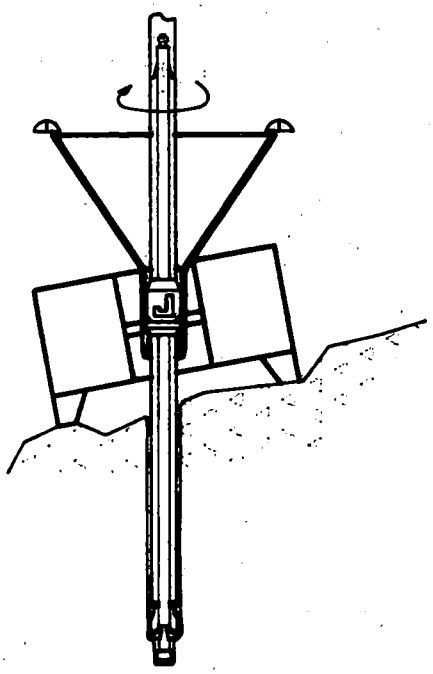
(9) LATCH IN AND TENSION UP MINI HRD



(10) LOWER HYDRIL TUBING TO JUST ABOVE BHA BIT



(11) PUMP DOWN INNER BARREL AND LATCH IN



(12) ACTIVATE SECONDARY COMPENSATOR AND BEGIN DRILLING WITH DCS

PROGRAMS RANKED THEMATICALLY, APRIL 1990

BRIEF TITLE	LITHP	OHP	SGPP	TECP	JOIDES Reference
Antarctic Ocean History, near Ross Sea and Antarctic Pen.		m			-
Antarctic Peninsula Margins (2 legs of 2)				9	297, 351
Atolls, Guyots, & Aprons, W-C Pacific (2 legs of 2)		4 & 6	3	15	203 Rev., 335 Rev.
Barbados Accretionary Wedge (2 legs of 4)			10	6	378 Rev.
Bering Sea (1 leg of 1, from CEPAC-DPG)		5	m	13	CEPAC-DPG
California Current: Neogene		8			271
Carribean Crust (1 leg of 1)				14	343
Cascadia Margin (1 or 2 legs; to be a CM-DPG)			1	3	233, 237, 317
Cayman Trough (1 leg of 1)	24.5			10	333
Chile Triple Junction (2 legs of 2)	24.5		2	1	362 Rev.
Deepening 801C/deep drill. M-series in W.Pac.(1 leg of 1)	9.5			11	368, 287
East Pacific Rise: bare-rock (several legs, from EPR-DPG)	2.5		7		321, 357 Rev.
Endeavour Ridge: hydroth. at medium-spreading ridge	12		12		325
Endeavour Ridge: origin of large metal sulfide deposits	15				325
Equatorial Atlantic Transform Margins (1 leg of 1)				7	313, 346 Rev.
Florida Escarpment			m		332
Geochemical Reference: for subduction zone	9.5				267
Geophysical Observatories: Hawaii pilot project (< 1 leg)	8			4	377 Rev
Gulf of California: hydrothermalism			8		275 Rev.
Hess Deep: layer 2/3 transition and layer 3	1				375
Juan de Fuca: evolution of near-axis seamounts	16				290
Lithosphere Characteristics	19.5				DMP initiative
Loihi Seamount: active young hotspot volcano	14		m		252 Rev.
MARK area: long section of upper mantle	2.5				369
Marquesas: temporal evolution of hotspot	23				291
Mathematician Ridge: extinct ridge	22				352
Mediterranean Gateways		11			323, 372
Mediterranean Ridge			m		330
Nankai-II			13		314
Navy Fan			m		250
New Jersey Margin sealevel		3	5		348
New Zealand Margin (see also SW Pac. sea level below)			9		337
North Atlantic: non-volcanic rifted margins (2 legs of 6)				2	334, 365, 366
North Atlantic: volcanic rifted margins (2 legs of 4)	11			5	310,311,328,358,&363
North Australian collisional margin (2 legs of 2)			m	8	340
North Pacific Neogene and older		2			CEPAC-DPG
Northernmost Atlantic paleoceanography: Arctic gateway		1			305, 336, 320
Oceanographer FZ: long section upper mantle	21				374
Peru: gas hydrates			6		355
Sedimented Ridges II (2nd leg of 2)	5		4		SR-DPG
Shatsky Rise: anoxic events		10			CEPAC-DPG
Site 735B: layer 3-mantle transition	18				300
Site 505: stress measurements (1 to 2 legs of 1 to 2)	19.5			12	373
Somalia: deep stratigraphic hole		m			211
South Atlantic eastern margin upwelling		m			339, 354
South Atlantic western margin ocean history		m			-
South Equatorial Atlantic Neogene		7			347
Southwest Pacific sea level program		9			337, 338, 367
TAG Area: high-temperature hydrothermalism	4		11		361
Valu Fa Ridge: sulfide mineralization in arc environment	17		14		360
Vema FZ: layer2/3 transition	7				376
Vema FZ: long section of layer 3	13				376
Vema FZ: layer 3-mantle transition	6				376
West Florida Margin Sea Level		12			345

m = mentioned for further review and possible higher ranking before April 1991

	LITHP	OHP	SGPP	TECP
1	Hess Deep (multi-leg)	Northernmost Atlantic (2? legs)	Cascadia (1 or 2 legs)	Chile TJ 2 legs
2	tie\ EPR (multi-leg)	North Pacific (1 leg)	Chile TJ (2 legs)	N Atl non-volc marg (multi-leg)
3	tie/ MARK (multi-leg)	New Jersey sea level (1 leg)	Atolls & Guyots (2 legs)	Cascadia (1 or 2 legs)
4	TAG (2 legs)	Mesozoic Guyots (1 leg)	Sed. Ridges (2 legs)	Geophys N of Oahu (part of a leg)
5	Sed Ridges (2 legs)	Bering Sea (1 leg)	New Jersey sea level (one leg)	N Atl volc marg (multi-leg)
6	Vema layer 3/mantle (multi-leg)	Marshall Atolls & G. (1 leg)	Peru Gas hydrates (part of a leg)	Barbados (2 legs)
7	Vema layer 2/3 trans. (multi-leg)	So. Equat. Atlantic Neog. (1? leg)	EPR (multi-leg)	Eq. Atl. Transforms (one leg)
8	Geophys N of Oahu (part of a leg)	California Current (1 leg)	Gulf Calif (one leg)	N Austral collision (2 legs)
9	tie\ Geochem. Ref. (one leg)	SW Pacific sea level (1 or 2 legs)	New Zealand (one leg)	Antarctic (2 legs)
10	tie/ Deepen 801C (one leg)	Shatsky Rise anoxia (part of a leg)	Barbados (multi-leg)	Cayman (one leg)
11	N Atl volcanic margins (multi-leg)	Mediterra'n Gatew'y (1? leg)	TAG (2 legs)	Deep Drilling M ser (one leg)
12	Endeavor hydroth'm (one leg)	West Florida Margin s.l. (1 leg)	Endeavour hydroth. (one leg)	Costa Rica stress (1 or 2 legs)
13	Vema long sect.layer 3 (multi-leg)		Nankai II (one leg)	Bering Sea (one leg)
14	Loihi (one leg)		Valu Fa arc sulfide (one leg)	Caribbean Crust (one leg)
15	Endeavor sulfide (one leg)			Atolls & Guyots (2 legs)
16	Axial Seamount (one leg)			
17	Valu Fa arc sulfide (one leg)	(plus 5 others)	(plus 6 others)	
18	SW Indian 735B (1 or 2 legs)	*Antarctic near Penin.*	*Bering Sea*	
19	tie\ Costa R. stress (1 or 2 legs)	*Antarctic near Ross Sea*	*Florida Escarpment*	
20	tie/ DMP charact. (multi-leg)	*Somalia deep hole*	*Loihi*	
21	Oceanographer (multi-leg)	*SE Atlantic Upwelling*	*Mediterranean Ridge*	
22	Mathematician (one leg)	*SW Atlantic Margin*	*Navy Fan*	
23	Marquesas (one leg)		*N Austral margin*	
24	tie\ Chile TJ (2 legs)			
25	tie/ Cayman (one leg)			

note:
the horizontal lines below ranks 5, 10, and 15 mark the divisions on the illustrations; they have no other significance