SUMMER MEETING JOIDES PLANNING COMMITTEE
20 - 22 August, 1991
Bundesanstalt für Geowissenschaften und Rohstoffe
Hannover, Germany

MINUTES

Planning Committee (PCOM)

J. Austin, Chairperson - University of Texas at Austin, Institute for Geophysics
M. Cita-Sironi - University of Milan (ESF Consortium)
D. Cowan - University of Washington, College of Ocean and Fishery Sciences
T. Crawford (for J. Malpas) - University of Tasmania (Canada-Australia Consortium)
W. Curry (for B. Tucholke) - Woods Hole Oceanographic Institution
R. Duncan - Oregon State University, College of Oceanography
H. Jenkyns - Oxford University (United Kingdom)
Y. Lancelot - Université Pierre et Marie Curie, Paris (France)
J. Mutter - Columbia University, Lamont-Doherty Geological Observatory
J. Natland - University of California, San Diego, Scripps Institution of Oceanography
A. Sharaskin - Geological Institute, Moscow (USSR) (August 21 and 22, only)
P. Swart (for K. Becker) - University of Miami, Rosenstiel School of Marine and Atmospheric Science
K. Tamaki (for A. Taira) - Ocean Research Institute (Japan)
B. Taylor - University of Hawaii, School of Ocean and Earth Science and Technology
U. von Rad - Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)
J. Watkins - Texas A&M University, College of Geosciences

Liaisons

T. Francis - Science Operator (ODP-TAMU)
X. Golovchenko - Wireline Logging Services (ODP-LDGO)
B. Malfait - National Science Foundation
T. Pyle - Joint Oceanographic Institutions, Inc.

Performance Evaluation Committee

F. Goerlich - Germany

Guests and Observers

H. Beiersdorf - Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)
M. Kürsten - Bundesanstalt für Geowissenschaften und Rohstoffe (Germany)
D. Maronde - Deutsche Forschungsgemeinschaft (Germany)
N. Pisias - Oregon State University, College of Oceanography
G.M. Purdy - Woods Hole Oceanographic Institution

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

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

SELECTED ACRONYMS AND ABBREVIATIONS

ARC	Australian Research Council
BGR	Bundesanstalt für Geowissenschaften und Rohstoffe
BGS	British Geological Survey
BHTV	Borehole Televiewer
BIRPS	British Institutions Reflection Profiling Syndicate
BMR	Bureau of Mineral Resources
BRGM	Bureau de Recherches Géologiques et Minières
BSR	Bottom-Simulating Reflector
CSDP	Continental Scientific Drilling Program
CSG	Computer Services Group (ODP)
DCS	Diamond Coring System
DFG	Deutsche Forschungsgemeinschaft
DP	Dynamic Positioning
DPG	Detailed Planning Group
ECOD	European (ESF) Consortium for the Ocean Drilling Program
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
ETH	Eidgenössiches Technische Hochschule
FDSN	Federation of Digital Seismic Networks
FMS	Formation Microscanner
FY	Fiscal Year
GSGP	Global Sedimentary Geology Program
IDAS	Isothermal Decompression Analysis System
IFREMER	Institut Français de Recherche pour l'Exploitation de la Mer
IGBP(/PAGES)	International Geosphere/Biosphere Program (/Past Global Changes)
ILP	International Lithosphere Program
IOC	Intergovernmental Oceanographic Commission
IPR	Intellectual Property Rights
IRIS	Incorporated Research Institutions for Seismology
JAMSTEC	Japan Marine Science and Technology Center
JAPEX	Japan Petroleum Exploration Company
JGOFS	Joint Global Ocean Flux Studies
KTB	Kontinentales Tiefbohrprogramm der Bundesrepublik Deutschland
LANL	Los Alamos National Laboratory
LAST	Lateral Stress Tool
LBL	Lawrence Berkeley Laboratory
LRP	Long Range Plan
MCS	Multi-Channel Seismic
MDCB	Motor-Driven Core Barrel
MOU	Memorandum of Understanding
MRC	Micropaleontological Reference Center
NADP	Nansen Arctic Drilling Program
NAS	National Academy of Science
NERC	Natural Environment Research Council
NSERC	National Scientific and Engineering Research Council
OBS	Ocean Bottom Seismometer
ODPC	ODP Council
ONR	Office of Naval Research
OPCOM	Opportunity Committee
OSN	Ocean Seismic Network
PCS	Pressure Core Sampler
PDC	Poly-crystalline Diamond Compact (drilling bit)
PEC	Performance Evaluation Committee
PPI	Producer Price Index
RFP	Request for Proposals
RIDGE, InterRIDGE	Ridge Inter-Disciplinary Global Experiments (US and International)
SCM	Sonic Core Monitor
SES	Sidewall-Entry Sub
SNL	Sandia National Laboratory
SOE	Special Operating Expense
STA	Science and Technology Agency (of Japan)
STRATCOM	Strategy Committee
USSAC	US Scientific Advisory Committee
USSSP	US Science Support Program
VPC	Vibra-Percussive Corer
WCRP	World Climate Research Program
WG	Working Group
WOCE	World Ocean Circulation Experiment
WSTP	Water Sampler, Temperature, Pressure (downhole tool)

FY92 Programs:

A&G	Atolls and Guyots
CA	Cascadia margin
CTJ	Chile Triple Junction
EPR	East Pacific Rise
HD	Hess Deep
NPT	North Pacific Transect
504B	(Deepening) Hole 504B

DPGs and WGs:

A&G-DPG	Atolls and Guyots DPG
NAAG-DPG	North Atlantic-Arctic Gateways DPG
NARM-DPG	North Atlantic Rifted Margins DPG
OD-WG	Offset Drilling WG
SL-WG	Sea-Level WG

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EXECUTIVE SUMMARY

PCOM Motions

PCOM approves the minutes of the 23-25 April, 1991 PCOM meeting (p. 5).

PCOM adopts the agenda for the 20-22 August, 1991 PCOM meeting (p. 6).

Upon evaluation of the three supplemental science proposals we have received, PCOM ranks the potential science return of S-3 (OSN-2) the highest. Therefore, PCOM will consider only S-3 for scheduling in FY92 (p. 32).

PCOM moves to discontinue the practice of accepting "Supplemental Science" proposals (as defined by its motion and consensus of December 1990). However, continued submission of proposals requesting less than 1 leg of drilling is encouraged. Such proposals will be ranked in accordance with normal ODP review procedures (p. 35).

PCOM endorses the plan for allocation of incremental funding recommended by OPCOM as modified by PCOM (see minutes for 21 August 1991). To make the funds available in a timely manner, PCOM recommends that the spending plan be passed to BCOM for their consideration prior to their scheduled meeting (i.e., early 1992) (p. 39).

PCOM endorses the concept of drilling one rotary core site in the lagoon at Enewetak Atoll for the purpose of testing the drilling capability of *JOIDES Resolution* in shallow water. The duration of this test, including deviation from the proposed (legs 143/144) track, should not exceed 60 hours (p. 41).

PCOM moves that supplemental science proposal S-2 (to log Hole 801C) be incorporated in the prospectus of legs 143/144 (Atolls and Guyots) as an alternate site, and that the appointed co-chief scientists consider logging at Hole 801C, which has a considerable scientific merit as recognized by the thematic panels and by PCOM, if time is available (p. 41).

PCOM reaffirms the critical importance of the development of GEOPROPS, or tool of comparable capability, as an integral part of scientific planning. PCOM further recommends that OPCOM funds be made available as soon as practicable to further this aim. PCOM anticipates that a suitable tool could be tested on Leg 146 (p. 44).

PCOM endorses all personnel actions taken at the August meeting (p. 53).

PCOM recommends that proposals which have not been updated for three full calendar years before the present calendar year (i.e., January 1, 1988 for 1991 activities, to roll to January 1, 1989 on January 1, 1992 for 1992 activities) be declared formally "inactive". Thematic panels will be given the directive by the JOIDES Office not to review inactive proposals formally, but rather to initiate submission of proposal updates (as per revised Proposal Submission Guidelines, published in the June 1991 *JOIDES Journal*) from proponents if there is sufficient

panel interest. The community will be informed about this change in policy through the *JOIDES Journal* (see additional documentation in the August minutes). (p. 59.)

PCOM Consensuses

In order to decide at the Annual Meeting whether to reserve a maximum of 10 days during Leg 145 for drilling a re-entry hole, OSN-2, paired with NW-1A (Supplemental Science Proposal S-3), PCOM asks the thematic panels and co-chiefs for Leg 145 to determine which sites would be modified or dropped to accommodate up to 10 days at OSN-2 (p. 35).

PCOM thanks Erwin Suess, who is leaving the chairmanship of the youngest thematic panel of ODP (SGPP), for his dynamic, intelligent and dedicated leadership (p. 51).

Addition to OPCOM recommendations

(This addition displaces the original OPCOM recommendation 4 to recommendation 5 and the original recommendation 5 to 6.)

4) Recognizing the long-standing commitment of the scientific community to develop the means of drilling holes 4-6 km deep in 2-5 km of water, PCOM recommends that JOI, Inc. use the most effective route to commission a feasibility study to accomplish such drilling, based on target specifications now being prepared by the several thematic panels. PCOM anticipates a funding level of $0.1M in each of FY92 and FY93 for this item. (p.38).

Summer Meeting JOIDES PCOM
Tuesday, 20 August 1991

905. Welcome and Introduction

PCOM Chairperson Austin called the 1991 Summer Meeting of the JOIDES Planning Committee to order. Von Rad introduced President Dr. M. Kürsten, of BGR, who welcomed the attendees to Hannover. Kürsten noted that BGR has a long history in Marine Geology. BGR's status has recently increased due, in large part, to international cooperation in projects such as ODP, which BGR has strongly supported. With reunification, East German scientists will now be able to participate in ODP.

Von Rad explained meeting logistics and plans for the Harz Mountains field trip following the meeting. He introduced H. Beiersdorf (BGR) and F. Goerlich (PEC III), and informed PCOM that D. Maronde (DFG) would arrive on Wednesday and host a reception on Wednesday evening. Von Rad also introduced U. Röhl and E. Brockmann (BGR), who would provide logistical support. Austin then called for introductions around the table. He noted that there would be no representative from the University of Rhode Island, Graduate School of Oceanography, since Schilling (alternate for Leinen) had returned to the US to attend to hurricane damage to his home.

906. Approval of Minutes of 23-25 April, 1991 PCOM Meeting

Austin called for comments, corrections and approval of the minutes of the 23-25 April, 1991 PCOM Meeting held at Narragansett, Rhode Island. The minutes included modifications through August 2, 1991. Mutter commented that appendices did not accompany the revised draft minutes. Fulthorpe replied that this has been the standard practice. Appendices are sent out only once: with the draft minutes. There were no further corrections.

PCOM Motion

PCOM approves the minutes of the 23-25 April, 1991 PCOM meeting.
Motion Natland, second Watkins Vote: for 14; against 0; abstain 1; absent 2

907. Approval of Agenda

Austin stated that one purpose of the meeting was to hear reports from liaisons to other geosciences programs, though success in attracting liaisons had been minimal. He added that Purdy would give his report later than scheduled in the agenda. PCOM would also consider modifications to the near-term program, OPCOM recommendations, format/content of the FY93 North Atlantic Prospectus, a geriatric study of ODP proposals, third-party tools and GEOPROPS in particular, and the issue of PCOM members as co-chiefs. He added two items to the agenda: nomination of a chair for the PANCHM meeting and a report on PEC III by Goerlich. Austin called for further additions.

Swart suggested discussion of standardizing procedures for voting on proposals by thematic panels. Two points should be addressed: voting method and maturity of proposals considered. Blum suggested that this might come up during the report on the geriatric study. Austin said that it would be taken up under "New Business". In response to a question from Francis, Austin confirmed that the proposed test of *JOIDES Resolution's* shallow-water drilling capability, during the A&G legs, would be discussed under "Adjustments of Near-Term Program". Von Rad proposed discussion of of co-chief selection, including balance of US and

non-US co-chiefs and the inclusion of proponents. Austin called for adoption of the revised agenda.

PCOM Motion

PCOM adopts the agenda for the 20-22 August, 1991 PCOM meeting.
Motion Watkins, second Natland Vote: for 15; against 0; abstain 0; absent 2

908. ODP Reports by Liaisons to PCOM

NSF

Malfait reported that increases requested for NSF in FY92 total 17.5%. (Actual congressional actions are listed in Appendix 1.) The US House of Representatives passed an amount slightly less that was requested and the Senate passed an amount reduced somewhat further ($2645M). Elements of uncertainty were the current political situation in the USSR (where a coup was in progress) and the space station, which was not included in the budget that was passed. In addition, the Senate recommended that the Defense Department should support logistics for the Antarctic program. Budget problems could result if this recommendation is not taken up and NSF has to provide support. These matters should be finalized in September.

The budget for ODP Operations and Management Support was submitted at $41.4M. The $2.1M OPCOM increment will be evaluated later (Appendix 1). A 4-year program plan is needed this year (1993-1996). The budget guidance that NSF has given JOI, Inc. for the 4-year plan is consistent with LRP projections. Additional platforms will have to be considered. (Appendix 1 contains a timeframe for activities and funding to the end of 1993 and lists of FY91 and FY92 field programs.) Some other proposals are still under consideration for FY92.

Discussion

Natland, noting the decision to plan using LRP budget projections, questioned the accuracy and meaningfulness of those projections. Responding to a question from Mutter on the doubling of the Instruments and Facilities budget by the Senate (Appendix 1), Malfait said that the Senate wants to see construction of new university buildings. Austin asked why the NAS review of the LRP, which had been described as imminent a year ago, had not yet taken place. Malfait replied that there was some concern that NAS will not be able to conduct a timely review. Austin went on to say that an NAS review had been one of STRATCOM's strongest recommendations, and that it was unfortunate that this had not happened. Pyle felt that NAS had said that they would conduct the review by March 1992, but Malfait said that was uncertain.

JOI, INC.

Pyle noted that the FY92 budget, augmented by the OPCOM increment, is close to the LRP projection. (Appendix 2 shows LRP budget projections to FY2002.) FY98 marks the end of the current lease on *JOIDES Resolution* and a possible date for a change to a different platform (or platforms). Projections are based on the assumptions listed in Appendix 2 (average annual cost increase of 3.7%). Uncertainties in the post-1993 financial requirements of ODP are: inflation assumptions, engineering and technical developments (Appendix 2), SOEs (H_2S

safety, ice support vessels), *JOIDES Resolution* lease in 1998, alternate platforms (number, cost, management), and science trends and new discoveries.

Liaison groups have now been established with GSGP, FDSN, NAD, Inter-RIDGE and JGOFS. No liaison exists with IGBP/PAGES. (Other interactions, with groups involved in continental and high-temperature drilling, are listed in Appendix 2.)

The FY92 Program Plan (Appendix 2) was approved by EXCOM at its meeting on 9-11 July in La Jolla. (FY92 SOEs are summarized in Appendix 2.) It had been necessary to set aside $0.125M as unspecified. FY92 SOEs total 4.6% of the combined ODP-TAMU and ODP-LDGO budgets, exceeding the 4% minimum.

(The present status and recent past of ODP, from a program management perspective, are summarized in Appendix 2.)

Discussion

Crawford stated that the Canada-Australia Consortium will decide on renewal in the next 2 months and asked whether any increase in international partner contributions was planned. Malfait replied that a proposal to increase such contributions by 7% was discussed by ODPC at its July meeting. Francis noted that only the LANL sampler will be available on Leg 139.

Lancelot commented on liaisons with other geosciences initiatives. He said that the best liaisons are people involved in both programs. Formal liaisons are less effective. The main problem with IGBP is that no ODP people are involved in that program. The best way to interact with other programs would be to mount joint operations or write proposals together. However, Austin felt that formal liaisons encourage informal interactions. Pyle remarked that inter-program liaison has been initiated to achieve two objectives: 1) to increase communication, and 2) to dispel the notion that ODP is an "old boys' club". Austin pointed out that more liaisons had wanted to come to this meeting, but had been prevented from attending by conflicting schedules. Taylor suggested having liaisons attend a PCOM meeting other than the August meeting in order to minimize such conflicts. Austin felt that such action was not yet necessary, but might have to be considered if the situation did not improve.

SCIENCE OPERATOR

Francis began his report by pointing out that he would discuss Leg 137 in his engineering report later in the agenda.

Only one multi-shot camera was aboard at the start of Leg 138, Eastern Equatorial Pacific (the other 2 had been with the manufacturer for maintenance and failed to make the Panama port call). Permission was obtained from Ecuador for both drilling of EEQ-4 and a stop at the Galapagos Islands for the extra multi-shots. Drilling progressed so rapidly that an extra site (850) was chosen and it was also possible to drill an additional, alternate site (854) at the end of the leg (Appendix 3). Approximately 5537 m of core were recovered, exceeding the previous record set on Leg 133 by 19 m. The XCB performed very well; ~1700 m of core was recovered with an average recovery of 93% and no disturbance (Appendix 3). Carbonates with a siliceous component seemed to be ideal for the XCB. Pisias added that holes had been

double-XCB'd at 2 sites and that high-resolution sampling was now possible with the XCB in the right lithology.

Francis continued, noting that the Macintosh visual core description program had been used for the first time "in anger" on Leg 138. This is a barrel sheet program that enables on-board production of publishable barrel sheets (Appendix 3). The BUGIN program, for computerizing biostratigraphic data, outputs range charts. It was a preexisting program for IBM-type computers. A Macintosh version was developed and this was tested on Leg 138, but did not work. Swart asked why the IBM version was not used, and Francis replied that most shipboard scientists are Macintosh-oriented, so this was a more user-friendly solution. In response to a question from Cita-Sironi, Pisias said that all cores were opened and described aboard ship.

Francis reported that a great deal of work had to be done during the 6-day San Diego port call, including modifying the air-conditioning system to provide over-pressure in the labs and adding H_2S detectors. In addition, a large number of visitors took advantage of the ship's first return to the US mainland.

JOIDES Resolution was now drilling at Middle Valley on Leg 139 (Sedimented Ridges) (Appendix 3). Plans to leave an instrumented, cased reentry hole at MV-7, the first site and comprising a transect of holes, were dropped. At the next site, MV-2 (an 8-hole transect), massive sulfides were recovered. The sulfides are very dense and it was difficult to clear cuttings. A drill-in casing with a free-fall funnel was deployed. Thicker sediment was encountered at MV-3. The maximum temperature was 110°C, but no major H_2S was encountered. Site MV-1 is in an active vent field. High temperatures were expected (Appendix 3), but not encountered. The first H_2S alert occurred here, but the H_2S was in the core liner and it was not a problem in the lab. The Sandia logging tool was run and lost. The Adara tool (temperature sensor in the APC shoe) was working well. The WSTP tool (Appendix 3) had been rebuilt for Leg 139: 196°C was measured at 20 mbsf in Hole 858B (Appendix 3). Subsequently a maximum of 208°C was measured in Hole 858D. The first 2 runs of the PCS (Appendix 3) were unsuccessful, but the next 3 runs recovered 0.5 m core under pressure, water (no core) under pressure and core under pressure with gases, respectively. The PCS now seems to be a working tool. Hole 857C is a cased, reentry hole: 568 m was drilled and cased, then the hole was left to equilibrate. Subsequently, it was deepened and "corked". Two corked reentry sites will be achieved by the end of Leg 139.

Discussion of the engineering aspects of Leg 140 (504B/HD) will be covered in the engineering report. Guidebases, etc, for HD will be aboard. (Co-chief scientists and other personnel for legs 140-146 are listed in Appendix 3.)

No problems with clearance are expected for Leg 141 (CTJ). Two Chilean scientists and a Chilean Navy observer will be aboard. Leg 141 marks the first instance of permission being given to drill through a BSR. The strategy will be to work upslope from the deepest site, following a progressively strengthening BSR. Emphasis will be placed on the use of the PCS and WSTP tools.

Leg 142 (Engineering EPR) will be discussed in the engineering report.

Legs 143 and 144 comprise the A&G program. Leg 144 will be the first leg to have 2 women co-chiefs. An engineering test of the capability of the *JOIDES Resolution* to drill in very

shallow water has been proposed. The test will be conducted at Enewetak and could be conducted on either Leg 143 or Leg 144.

Francis went on to discuss the selection of co-chief scientists, about which there has been some criticism. The position after Leg 142 was as follows: if the allocation of co-chiefs were to be in balance by the end of calendar year 1992, the international partners were owed 8 co-chiefs with only 4 legs (143-146) remaining unfilled (Appendix 3.15). Rather than appoint no US co-chiefs, however, it was decided to invite 3 from the US and 1 each from ESF, Germany, Japan, UK and USSR. The Japanese scientist declined the invitation; the co-chief from Germany subsequently withdrew because there was no proponent co-chief on Leg 145. Austin interjected that the letter of withdrawal had been most eloquent, expressing the feeling that the scientific objectives of the leg would be better served if one of the co-chiefs were a proponent. He felt that ODP owes the individual concerned a debt; his name should be brought up again for nomination as a co-chief on an appropriate future leg.

The outcome of this round of co-chief invitations, Francis continued, was that 5 US and 3 international partner co-chiefs were appointed. Looking to the situation at the end of calendar year 1993, with co-chiefs now in place up to and including Leg 146, ODP owes the international partners 12 co-chief positions, since there are now 7 international partners (Appendix 3.17). The situation is also affected by the fact that since 1989 there has been 1 engineering leg/year with only 1 co-chief scientist, who to date has always been US.

In response to a question from Duncan, Austin said that the MOU expectation is that international co-chief balance will be averaged over 1 year. Malfait pointed out that the MOU specifies that co-chiefs need only be invited, for purposes of international balance, and need not necessarily serve. He added that ODPC is ready to consider averaging over time periods of >1 year. Natland felt that engineering legs should not be included in the tally. Lancelot suggested rewording MOUs to balance participants and not co-chiefs. Choice of co-chiefs must be based on science. Malfait responded that ODPC did not express that view and had supported continuing co-chief representation as expressed in the present MOU. Cita-Sironi suggested appointing 3 co-chiefs/leg to alleviate the problem. Crawford supported Lancelot's statement and encouraged flexibility and balance over longer periods. Jenkyns stated that the UK view is similar. UK might accept a trade-off of co-chief positions for extra shipboard scientists. Von Rad stressed that one co-chief on each leg should be a proponent.

Francis continued his report with a discussion of staffing. Legs are staffed to Leg 144, inclusive. ODP-TAMU is waiting for some international nominations for legs 145 and 146. Nominations should be sent to A. Meyer at ODP-TAMU. The number of scientists/leg is generally ~25-30 (Appendix 3). The record is 31 on Leg 138. ODP-TAMU would like to maintain the number at 26-27 (including the ODP staff scientist and ODP-LDGO logging scientist). (Staff changes at ODP-TAMU are summarized in Appendix 3.) Staff scientist M. von Breymann has left and been replaced by R. Musgrave, who will sail on Leg 141 (on which von Breymann will be a shipboard scientist). The major turnover is among seagoing technical support, whose turnover rate is ~1/month. In response to a question from Mutter, Francis said that seagoing technicians generally burn out after ~3 years. Responding to Swart, Francis said that ODP-TAMU might be looking for staff scientists soon and that nominations should be sent in. Finally, Francis reported that Initial Reports to Leg 132 and Scientific Results to Leg 118 have been published.

WIRELINE LOGGING

Golovchenko began by noting that Leg 137 had a limited logging program. The plan had been to run a temperature log, BHTV to examine both casing and open hole conditions, flowmeter for permeability measurements, and FMS (never before run in Hole 504B). In reality, the temperature log was run, as was the BHTV inside the casing (Appendix 4). Only a short section of open hole was examined with the BHTV, the flowmeter failed, and there was no time for the FMS run. The temperature log shows that downhole flow of cold water has increased. Natland commented that temperature measurements made on successive visits to Hole 504B show that downhole water flow first decreased and has now increased again.

Golovchenko characterized Leg 138 as a very successful logging leg. A total of 2500 m of hole was logged, involving 7300 m of logs (Appendix 4). Correlation of log and GRAPE densities was performed aboard ship for the first time. Correlation was better with HPC core than with XCB core. This was the first leg with true core-log integration, the result of improved data transfer and better coordination between the ODP-LDGO and the JOIDES logging scientists. The scientific party received logging data before logging was completed. Comparison of core and log gamma, resistivity and susceptibility records is not yet possible, since there are no core gamma measurements or core resistivity measurements comparable with the highest-resolution log resistivity (FMS), and no log susceptibility tool. Calcium content correlated with density on Leg 138.

Leg 139 required a great deal of preparation because of the use of specialty and high-temperature tools. Schlumberger was out in force to evaluate tools at the San Diego port call.

The latest French (BRGM/Plastelec) tool, rated to 500°C, was not ready for Leg 139. The Sandia tool is rated to 350°C, and the Kuster tool (also 350°C) was purchased as a back-up. The JAPEX tool has been leased, but downgraded to 230°C. The logging winch heave compensator was removed at San Diego and the effects of heave will, therefore, be seen in the logs. The highest temperature measured on Leg 139 to date has been 222°C (using the Sandia tool) at Site 857. At Site 858, 196°C was measured at 20 mbsf. In response to a question from Pyle, Golovchenko explained that logging is being carried out using the SES with continuous circulation; this might be reducing temperatures.

Golovchenko went on to discuss personnel matters. The departure of R. Jarrard was imminent. Advertisements for a replacement will be placed in *Eos* and *AAPG Explorer*. The international partners have also received copies of the advertisement. Applications will be reviewed at the end of September. In the meantime, M. Lyle is filling in for Jarrard. Austin asked that Golovchenko remind R. Anderson that ODP-LDGO should have a representative at the PCOM Annual Meeting. Golovchenko added that ODP-LDGO will also be hiring 3 others: a programmer/systems manager, an additional log analyst and a replacement for a log analyst (who has accepted a program coordinator position).

A new Masscomp computer has been purchased at 20% of the list price. The latest version of the log analysis package has been received. It is very user-friendly and will cut down on the training of JOIDES logging scientists. ODP-LDGO has a space problem and has leased a trailer with 3 offices. A request for a second trailer for tape storage has been turned down by LDGO administrators.

Discussion

Cowan asked whether the packer problem on Leg 137 was significant. Golovchenko replied that there was no apparent reason why it deflated. It was in casing at the time. Austin added that the tool is back on Leg 139. In response to a question from Pyle, Golovchenko said that the reason for the failure of the BHTV was also unknown. Austin recalled that ODP-LDGO had had problems filling logging requests with the available staff and asked about the current situation. Golovchenko explained that Leg 137, which produced few logs, had provided a useful respite and that ODP-LDGO had almost caught up with requests. Additional staff would be hired soon.

909. JOIDES Reports by PCOM Liaisons

EXCOM

Austin reported that EXCOM had met jointly with ODPC in La Jolla on July 9-11. The joint meeting is usually in June, but was moved to coincide with the San Diego port call.

Individual perspectives on renewal were discussed. The prospects for renewal to 1998 are positive, but there is less agreement about the second 5 years of a philosophical 10-year renewal, and particularly about whether *JOIDES Resolution* or other platform(s) would be used post-1998. EXCOM has finally begun to address the alternate platform issue, raised initially as a French initiative. A 1-person sub-committee was nominated to report to EXCOM on the subject in January. Austin added that he would touch on this issue again during his report on OPCOM.

EXCOM endorsed the FY92 Program Plan, with a caveat regarding Leg 147 (though Leg 147 is technically not in FY92). Austin wrote the motion (Agenda Book blue pages 7-8). Leg 140 had become an "either/or" situation because of junk left in Hole 504B at the end of Leg 137. In addition, DCS III will not be available for Leg 147. Both of these points fed into the motion. Mutter asked whether the "bottom line" was that Leg 147 would be HD. Austin replied that HD has to be addressed, but that if Leg 140 is HD, Leg 147 might not be HD.

Responding to a question from Duncan about EXCOM's interest in drilling the lower crust and upper mantle, Austin said that, at the October 1990 EXCOM meeting, some members had wanted to see exciting scientific results. This discussion took place earlier in the renewal process. EXCOM reiterated its October 1990 motion at its July 1991 meeting (Appendix 5). However, Austin stated that it is not clear that PCOM would have followed EXCOM's advice in this matter if the HD proposal had not arisen. There was some feeling on EXCOM that PCOM should heed EXCOM's advice, regardless of other factors. Austin felt that EXCOM (and LITHP) would rather see a single hole through the entire oceanic crust ("Mohole") than an offset approach, but Pyle disagreed that EXCOM had expressed that opinion clearly. Cowan asked how PCOM was supposed to find sites for Mohole drilling without proposals. Austin replied that this was merely an example. EXCOM wants PCOM to respond to exciting developments. A proposal to investigate a possible K/T boundary impact site, to be submitted soon, will probably rise through the system like HD.

EXCOM feels that the LRP is a good document, but an inadequate implementation plan. EXCOM wants PCOM to consider focussing ODP.

Taylor asked why, if DCS III would not be available for Leg 147, EPR still formed part of the FY92 Program Plan motion. Austin explained that he had retained the reference to EPR because nothing has been received in writing about the status of DCS III. In response to a question from Lancelot, Austin said that it was his sense that deep drilling at EPR should not proceed with DCS II, but should await DCS III. Natland added that the ODP-TAMU engineers have said that they would only drill one leg at EPR with DCS II (its elevated drilling platform is a safety concern). Duncan said that DCS II is also very slow and Lancelot added that, therefore, Leg 147 should not be EPR. Responding to a question from Natland, Francis said that it was necessary to push on to DCS III. Further drilling with DCS II after Leg 142 is not desired.

Austin continued his report, noting that EXCOM had endorsed PCOM's motion about the size of DPGs. He added that EXCOM is concerned about PCOM's role and requests that PCOM consider the appropriateness of PCOM members serving as co-chiefs. EXCOM is neutral on this issue, but would like to get PCOM's feelings. Austin pointed out that non-US members have often served longer on PCOM than US members and might be disadvantaged if not allowed to serve as co-chiefs for the whole period of their membership on PCOM. Cita-Sironi asked about support on EXCOM for this idea. Austin replied that C. Dorman had raised the issue, but that there was wider support. Others had felt, however, that such a policy might discourage the best people from serving on PCOM. Lancelot felt that having PCOM members as co-chiefs was not a problem as long as the procedure for choosing co-chiefs was well-defined and based on science. Austin said that EXCOM and ODPC were sympathetic to rewriting MOUs on international participation as co-chiefs. They supported having proponents as co-chiefs. EXCOM is interested in PCOM's philosophical stance, and is not asking for PCOM action at this time.

Pisias stated that ODP-TAMU appoints co-chiefs. He feared that to disallow PCOM members would discourage people from joining PCOM. Austin informed PCOM that Francis would write an article on co-chief selection for the next issue of the *JOIDES Journal*. It seems that much of the community is ignorant about how it is done. Von Rad noted that EXCOM had felt that ODP-TAMU should choose co-chiefs from the lists of names presented by PCOM. Francis said that this usually happens, but that when international balance is required, ODP-TAMU approached the international PCOM member concerned for a nomination. Von Rad and Austin proposed that the PCOM chair, at least, should be involved in the process. Lancelot agreed. However, Francis pointed out that ODP-TAMU has the authority to choose co-chiefs. Mutter felt that there was potential for conflict of interest when proponents on PCOM might be chosen as co-chiefs and that this also applied to panels. Austin recalled that proponents left the room during pertinent parts of the discussion at the April PCOM meeting. The issue of institutional representation was also considered in deciding on that course of action. Austin said that the issue of co-chief selection would be discussed further under New Business.

SMP

Austin informed PCOM that Cita-Sironi was the PCOM liaison to SMP, though she had not been at the last SMP meeting. The full SMP minutes were included in the Agenda Book (white pages 59-74). He asked if there were any SMP items that PCOM wished to discuss.

Regarding levels of technical staffing on the drillship raised by SMP, Natland reported that the issue had also been discussed at the Co-Chiefs' Meeting. Concern was expressed about the

size of the shipboard party. Austin, referring to Francis's graph (Appendix 3), commented that shipboard parties are not increasing as rapidly as had been thought.

Cita-Sironi asked whether the digital image scanner had been used on Leg 138. Pisias replied that it had not: only core reflectance had been measured.

PPSP

Austin said that he had not attended the PPSP meeting. He asked it there were any questions based on the minutes (Agenda Book, white pages 75-78). In the absence of further discussion, Austin reported that he was encouraging early completion of updated safety guidelines, on which PPSP continues to work.

DMP

Becker (not present at PCOM) had attended DMP's last meeting as PCOM liaison. Austin said that two points arose for consideration: 1) testing of GEOPROPS cannot now be conducted on Leg 141, opening up the question of whether a test of the MDCB is necessary on that leg, and 2) DMP's recommendations regarding the logging program for Leg 140 should be repeated to ODP-LDGO and the co-chiefs.

Taylor felt that the Leg 140 recommendation amounted to changing the program for that leg after the fact. However, Golovchenko explained that this was something discussed at the pre-cruise meeting that somehow was omitted from the prospectus.

Lancelot enquired about the DMP recommendation to increase the number of re-entry holes drilled, adding that this would take time. Austin replied that ODP must respond to proposals and he did not think that PCOM should make a statement on this matter. He reminded PCOM that DMP is an advisory panel, not a thematic panel. Taylor said that such recommendations must come in early enough for PCOM to consider them along with scientific objectives. This would avoid any need to take time away from drilling programs which have already been defined. Austin commented that this is related to focussing of ODP. If PCOM decides to focus ODP, proponents of proposals may become less important.

Crawford pointed out that there was no "subduction zone off Tasmania", as stated on p. 7 of the DMP minutes (Agenda Book, white page 89). He requested that this be changed to "Southern Ocean". The change was noted.

SGPP

Swart reported that SGPP had carried out a global ranking in March. Then, 5 categories of proposals had been created and proposals ranked within each group. The global ranking was created by voting first on the top proposal in each group, then subsequently on the top proposal remaining in each group after successive rounds of voting. Proponents left the room until their proposal had been removed from a voting position. This meant that some were out of the room for most of the time, and some peculiar ranking resulted. Austin interjected that Moberly had always characterized the voting of SGPP as very fair. Swart responded that he had the impression that this was a new system and he did not like it, since the results depended greatly

on who was at the meeting. Natland stated that the SGPP method had been in use for at least one year.

At its June meeting, SGPP decided that the voting method adopted for its March global ranking had been unfair and decided on a second vote. This vote was initially to include all proposals, but, following further discussion, it was decided to consider only North Atlantic proposals. Austin pointed out that the top five proposals in March had remained high in SGPP's new, North Atlantic ranking, but that below that level there had been much change (Appendix 6). Swart agreed, noting that the Barbados proposal had moved from 17th to 3rd.

*(**Note:** in the draft minutes it was incorrectly reported that E. Suess, then SGPP chair, was a proponent of the Barbados proposal considered for ranking. Suess is **not** a proponent of proposal 378-Rev (Barbados accretionary wedge). The JOIDES Office sincerely regrets the implication that anyone on SGPP deliberately influenced the ranking of any proposal.)*

Lancelot emphasized that rankings should drive the drillship, rather than the reverse. Austin asked how much guidance PCOM should give the thematic panels. Discussion was required. PCOM has given guidance that ranking should be global. He, therefore, asserted that the new regional ranking should be ignored. Swart stated that the two top-ranked programs in the original ranking were not even mature proposals. Austin countered that generic programs were placed in the global ranking as place holders, an acceptable practice. They would be ignored when creating the North Atlantic Prospectus (see minutes, p. 54). The issue is the desirability of a regional ranking, which Austin opposed. Mutter added that voting procedures should also be addressed. Austin replied that in the past this had been left to the panels, but Mutter felt there was a need for some uniformity. Austin stated that, so far, PCOM has said that ranking should be global and that proponents must not vote. PCOM should now discuss the issue further. Von Rad reported that he had spoken to N. Christie-Blick, an SGPP member, who had explained that, given that the *JOIDES Resolution* would spend 2 years in the Atlantic, SGPP wanted to state its preferences. SGPP would, however, stick to its global ranking at other meetings.

Austin noted that the SGPP chair had given responsibility for writing minutes of the June meeting to a member. The JOIDES Office then had difficulty obtaining the minutes in time for inclusion in the Agenda Book and the minutes received were incomplete. Austin said that he would like PCOM to voice its concern: input from the panels is needed on time. Von Rad felt that delegation of minute-writing should be allowed. Austin agreed, but stressed that the chairperson must be responsible for getting the minutes in on time.

Swart continued his report by noting that the June meeting of SGPP had been held in conjunction with DMP. A fluid sampling workshop was to be held in Houston immediately following the present (August) PCOM meeting. SGPP heard two presentations on potential deep drilling targets in the Somali Basin and Aleutians (drilling from an island). SGPP felt that these projects would be too expensive. SGPP also discussed OPCOM priorities and the Gas Hydrates Workshop, held in conjunction with the March SGPP meeting. The workshop report was felt to be insufficiently thorough and will be rewritten. SGPP decided to solicit proposals for drilling gas hydrates in the Atlantic by placing an advertisement in the *JOIDES Journal*.

SGPP would also like to explore obtaining permission to drill in the Red Sea. Swart concluded his report by proposing that PCOM pass a motion thanking Suess for his chairing of SGPP.

NORTH ATLANTIC RIFTED MARGINS DETAILED PLANNING GROUP

Von Rad reported that NARM-DPG had its second meeting, lasting 5 days, in Copenhagen the week before the PCOM meeting. NARM-DPG had a difficult task, covering volcanic and non-volcanic margins. It considered 7 proposals at its first meeting and 5 additional proposals, mostly from the Greenland Geological Survey, at its second meeting. Its report is due by mid-September, for incorporation into the North Atlantic Prospectus.

Transects are envisaged at the following conjugate margins: Newfoundland to Iberia Abyssal Plain (non-volcanic) and Greenland to Rockall (volcanic), together with a mini-transect on the Voring Plateau (volcanic) (Appendix 7). NARM-DPG was a well-balanced group and Larsen was a good chair, though it was a good idea for PCOM to appoint Sawyer a co-chair for the second meeting, especially because of the number of Greenland Geological Survey proposals (for which Larsen was a proponent). Von Rad expected that NARM-DPG's recommendations will lead to ODP conducting much more basement-oriented drilling in the future.

Blum, who had also attended NARM-DPG, continued the report. He pointed out that a great deal had been sorted out at the first meeting. At the second meeting, 5 new proposals were considered and some new members were present. By the third day, a consensus had been reached. The philosophy of drilling conjugate margins was felt to be less important for volcanic margins, where radial transects were believed to be more appropriate to test plume models.

The transect strategy and site objectives for these volcanic margins were summarized (Appendix 7). The Voring margin is the same distance from the proposed plume as one of the Greenland transects. Mutter asked why, in that case, it was necessary to drill at both locations. Blum replied that their volcanic wedge morphologies differ.

The transect strategy and site objectives for non-volcanic margins were also summarized (Appendix 7). Some additional seismic data are required to plan the Newfoundland Basin sites. Austin commented that a cruise to collect such data is scheduled for summer 1992.

Blum reported that NARM-DPG will suggest 1 volcanic margin leg and 1 non-volcanic margin leg for FY93. NARM-DPG placed importance on examination of results of these first legs before proceeding with further drilling. Mutter asked whether there was an intention to drill a very seaward site at the east Greenland margin to provide a reference site in normal oceanic crust. Blum replied that this had not been felt necessary. Responding to a question from Cita-Sironi, Blum reiterated that NARM-DPG had felt radial transects would be more important than conjugate drilling on volcanic margins. Answering Francis, Blum said that the deepest hole to be drilled would be 2.5 km. Mutter asked whether drilling through the S-reflector was planned. Blum replied that NARM-DPG felt that the S-reflector was too deep to be drilled at its best-imaged occurrence.

OFFSET DRILLING WORKING GROUP

Taylor reported that OD-WG grew out of a workshop 2.5 years ago at Woods Hole on drilling the lower crust and upper mantle. One of the recommendations of that workshop was to hold a further workshop to study offset drilling.

OD-WG studied global offset drilling objectives and took a long-term view (1993-2000). The highest priority is the layer 3/mantle transition (Appendix 8). The strategy is to combine 4 sections to give a complete section at both fast- and slow-spreading ridges. The drilling program is expected to involve ~12 legs, at 1000±500 m of penetration/leg. The global priority regions for fast-spreading ridges are: HD (still the highest priority), MARK, Vema FZ, and Atlantis II FZ/Hole 735B (Appendix 8). All 4 regions are ready for first-stage drilling. Other regions are on-line for slow-spreading drilling (e.g., 15°20'N in the Atlantic, and King's Trough, also Atlantic). Fast-spreading alternates are needed, e.g., Pito Deep, Endeavour Trough. No region has been sufficiently surveyed for a 4-leg "total section" to be drilled. No drillable principal transform deformation zone (PTDZ) has been identified.

While gabbro is drillable with current technology, many objectives have engineering implications: DCS is needed for the Layer 2/3 transition, slimhole logging tools are required, guidebases for 35° slopes are necessary (27° is the current theoretical limit and 20° is a more reasonable practical limit), and drill-in casing will be needed.

Offset drilling will involve enhanced site survey requirements. Outcrop scale geological maps, with real dips, will be needed for work beyond first-stage drilling. This is beyond the scope of present site surveys.

OD-WG will ask for additional meetings in February and May, 1992. A report on the first meeting will be available by mid-September, 1991. OD-WG would like this report to be treated similarly to a DPG report and be included in the North Atlantic Prospectus. Austin said that could be discussed later in the meeting.

Natland, who had also attended OD-WG, added that ~20 different locations had been evaluated world-wide based on a number of factors. These included: the presence of components of the total vertical section, presence of a median valley "master fault", plume vs. none-plume origin, proximity to a fracture zone, hydrothermal processes, logistics, site survey data, etc. The locations were ranked from 0 to 3 and this is how the 4 highest-priority, fast-spreading regions were identified. The ranking was not based on proposals. The next meeting will focus on evaluation of data. Natland concluded with a "personal note", remarking that offset drilling is now at a stage comparable with paleoceanography at the introduction of the HPC. The potential exists to make a great scientific contribution..

Discussion

Cowan asked how the chances of drilling crustal transitions can be improved, given limited site survey data. Natland replied that the layer 3/mantle has not been completely defined, but that some places are known where it must be. Responding to questions from Mutter and Watkins, Taylor said that the guidebase problem (i.e., stabilizing it at steep dips) should be solvable. Natland commented that suggestions for solving the guidebase problem included: making 1 leg longer than the others, an improved gimbal system, and anchoring with concrete. As a "reality check", Pyle cautioned that neither a working DCS nor slimhole logging tools exist. Taylor responded that OD-WG would downplay the layer 2/3 transition objective until DCS III is ready and focus on other objectives. OD-WG would prefer full-sized holes to slim holes.

Von Rad noted the lack of site survey data, adding that OD-WG should provide guidance. Taylor responded that the last page of their report will be devoted to this issue. The top 4 regions have the best site survey data, though 3-dimensional data are lacking. Francis pointed

out that DCS II is limited to a drill string of 4500 m, but Taylor said that all locations are within the capabilities of the *JOIDES Resolution*. Responding to a question from Tamaki, Taylor explained that the term "master fault" refers to faulting creating median valley topography. "Transform fault" implies mylonite zones and movement. Natland confirmed that the layer 2/3 transition at HD is accessible by DCS. Austin asked whether OD-WG's request for 3 meetings was acceptable to PCOM. There were no objections.

INDIAN OCEAN SYNTHESIS

Duncan explained that the purpose of the Indian Ocean synthesis meeting, held over 3 days in Cardiff, UK, was to review the 9-leg Indian Ocean ODP program and recast the results in terms of the thematic objectives of COSOD II and the LRP. Attendees were divided into thematic groups. A preliminary report is included in the Agenda Book (white pages 139-147). A firm contract has been arranged with AGU to publish the 27 papers proposed at the meeting. Drafts are to be submitted by November and the volume is scheduled for publication late in 1992, soon after the Indian Ocean scientific results volumes. The volume is expected to contain 800-900 pages.

Discussion

Taylor asked whether the proposed papers had been listed before or after discussions with AGU. Duncan replied that a preliminary list had been in hand during negotiations with AGU. In response to a question from Swart, Duncan said that the editors would be himself, D. Rea, von Rad, R. Kidd, and J. Weissel. Von Rad suggested that other former regional panels might wish to discuss achievements in their respective regions. He asked whether any plans for such syntheses existed. Taylor, answering on behalf of the old Western Pacific panel, said that there had been some discussion and a meeting might be held in October 1992.

PERFORMANCE EVALUATION COMMITTEE III

Goerlich reported that PEC III comprises 8 members, 5 US and 3 international. It has met three times this year, in Austin, College Station, and San Diego, and will meet in September at ODP-LDGO and JOI, Inc., and again in November in Switzerland to write up their report.

Topics addressed have included co-chiefs and MOUs, overcrowding of the *JOIDES Resolution* with instruments and people, and the decision-making of PCOM ("top-down" vs. "bottom-up" philosophy). There has been some discussion of whether the *JOIDES Resolution* should be considered an investigation tool for paleoceanography for 2 years while a tool for deep crustal drilling is made ready. PEC III has considered splitting ODP in the long-term future and creating "think-tanks" to consider the main targets of deep crustal drilling. Technology development would take place while soft-rock drilling proceeds. However, splitting ODP involves technological, financial and political considerations. ODP should consider such long-range planning.

Discussion

Austin noted that these were preliminary ideas and that PEC III had not yet produced its report, which was not due until early January. Mutter asked whether publication of ODP volumes had been addressed. Goerlich said that it had, but that he could not comment at present. Francis

asked about the timeframe for splitting ODP. Goerlich responded that it was envisaged as occurring ~1998.

GENERAL PANEL ISSUES

Austin asked whether PCOM wished to pass a motion about timely submission of panel minutes. Watkins and Lancelot felt that this was not a matter for PCOM, but should be dealt with by the JOIDES Office. Natland also felt that no further action was required. Lancelot stated that he did not like singling out Suess (SGPP chair), who has done a great deal for ODP.

Swart suggested that PCOM should not decide on the question of whether to ignore SGPP's regional ranking without a vote. Austin responded that the new ranking was not mandated by PCOM and it was not clear how SGPP reached its ranking. Cowan agreed that the ranking was not requested: PCOM is still interested in global rankings. Austin stressed that PCOM's task is to agree on proposals for inclusion in the North Atlantic Prospectus. Taylor said that, in that case, the second SGPP list was unnecessary. Natland suggested reviewing this problem when considering the prospectus. The new ranking exists and PCOM can deal with it at that time. Austin pointed out that the other three thematic panels would be angry if this additional ranking was allowed to stand. Lancelot said that PCOM could not ignore the ranking, but must be precise. PCOM can say that it understands SGPP's point of view, but for several reasons PCOM cannot include the new ranking in its deliberations.

Natland said that PCOM cannot be sure that it received a global ranking from the panels, a point he had raised at PCOM's last meeting. Generic programs are a problem. Blum stated that the global rankings are the input to the system. Proponents are informed of these rankings and to change rankings at this stage would turn the system upside down. However, Swart responded that SGPP had felt that the problem was with their first ranking and not the second, though he acknowledged that it had been a mistake not to make the second ranking global. Lancelot said that PCOM should be open to SGPP's view that they made a mistake with their first ranking.

Austin pointed out that the two rankings are fairly consistent if only the top 7 proposals are considered. However, there is one glaring anomaly. Lancelot observed that the global ranking had already been used to set the direction of the drilling vessel and, therefore, suggested now allowing SGPP to change their minds. Austin pointed out that SGPP's rationale for its ranking had not been explained in the SGPP minutes and again highlighted the anomaly of a proposal (Barbados) rising from 17th to 3rd. Blum explained that the Barbados proposal, in successive rankings, had gone from 10th, down 7 to 17th, then up 10 to 3rd (Appendix 6 and Appendix 9, which compares the 1990 and 1991 global rankings for LITHP, OHP and TECP, as well as SGPP). Cita-Sironi said that the thematic panels have a great deal of power and they should, therefore, rank only once per year. Austin stressed the need to prevent regional panel thinking from resurfacing.

Swart said that, during SGPP's voting for global ranking in March, their "fluids" category contained 9 proposals. Barbados was nominally 7th within that group, but only the top and bottom proposals in the group were chosen, and the middle group were simply thrown in. However, their order ended up making a big difference in the ranking because of SGPP's voting system. Austin said that the JOIDES Office will remind panels about consistency in ranking. EXCOM also wants that.

Austin said that he would have to ask for a PCOM consensus that SGPP's regional ranking be disregarded, since the new ranking was neither requested nor explained and was not done by the other thematic panels. Mutter remarked that, in that case, a true global ranking was needed. Taylor suggested discussing Barbados as a special case when deciding on the prospectus. He did not like making it 3rd, or leaving it 17th. Austin predicted that the other thematic panels would object. Lancelot declared that if SGPP is unanimous in now thinking Barbados should be more highly ranked, PCOM has to allow that. However, he added, if its rise in the ranking is only an artifact of the voting procedure, to change would be dangerous. Natland said that, in the end, he agreed with Austin. SGPP will have the option to re-rank proposals next year. Austin said that they would also be able to reconsider proposals at their scheduled November meeting.

Jenkyns commented that the New Jersey sea level and Mediterranean sapropels proposals had been reversed in the new ranking. Swart responded that Mediterranean sapropels was not, in any case, a mature proposal. Cowan said that he echoed Lancelot in that panels should be allowed to change their minds, but that the scientific basis for any change must be made clear. Austin read the relevant section of the SGPP minutes (Agenda Book, white page 125). Lancelot agreed that the scientific basis for the change was not explained. Austin declared that the minutes would reflect that, in this instance, an invalid and unsolicited ranking had been produced.

910. Reports of Co-Chairs (or representatives) of Liaison Groups

Austin proposed not to discuss further the written reports from liaisons which were included in the Agenda Book: GSGP (white pages 149-151), NAD (white pages 153-167) and JGOFS (white pages 169-172). Reports from FDSN and InterRIDGE liaisons were expected to be heard later in the meeting.

911. Engineering Report

Francis began his report with a discussion of the status of Hole 504B following Leg 137 (Appendix 10) and plans for cleaning the hole on Leg 140. He noted that the bottom of Hole 504B is now at 5096.5 mbsl (1621.5 mbsf) and that the round trip time for pipe tripping is 18 hours. He added that vigorous circulation must be avoided to maintain hole stability.

Milling was successful and Hole 504B was drilled ahead with a tricone bit, retaining boot baskets because there was still some metal in the hole. Two RCB cores were then taken, with 17% and then 10% recovery. The second RCB was very worn (Appendix 10), indicating hard, abrasive rock. A diamond core barrel (DCB) was deployed and bit wear was severe. A second DCB wore out rapidly and the outer part of the core barrel was found to have broken off, leaving an 18.5 m length in the hole. Impregnated diamond core bits proved unsatisfactory for drilling in this lithology and, since a harder matrix cannot be obtained, RCBs will have to be used in future drilling at Hole 504B. During a subsequent fishing attempt, the overshot was lost. That junk (Appendix 10) will have to be fished on Leg 140. Taylor commented that the ideal fishing tools were not available on Leg 137.

Francis explained that the strategy on Leg 140 will be to try a number of fishing attempts with different fishing tools. During the first 36-48 hrs. temperature and FMS logs will be run. Then the following sequence of fishing attempts will be followed: another overshot (~1 day), spearing device (~1 day), taper tap (~1 day). If these fishing efforts fail, it is planned to mill

(~1 week). After 5 days, it will be known whether milling will be necessary. Clearing the hole of junk will take ~1 week beyond that.

Austin stated that if fishing fails, there will be a discussion among a small group of people (the co-chiefs, Francis, Pyle and Austin) to decide on the course of action to be followed. Austin stated that milling has not previously been considered as an option. PCOM is on record as recommending going to HD if cleaning attempts are unsuccessful after ~7-10 days at Hole 504B. The milling option is a new variable. The first plan was to allow only 7 days for cleaning Hole 504B on Leg 140. After polling PCOM on the issue, it was decided to increase this to 7-10 days, but there was no discussion of spending >10 days on cleaning and milling operations. Francis pointed out that the first 1-2 days will be taken up by logging, not cleaning. Austin recalled that the junk had been originally characterized by ODP-TAMU engineers as "eminently fishable". Pyle noted that JOI, Inc. must be involved in any decision about terminating operations at Hole 504B on Leg 140 and Austin confirmed that that would be the case. Lancelot said that his opinion had been either to spend the whole of Leg 140 fishing, if necessary, or to forget about Hole 504B. He did not feel that the cleaning objective could necessarily be met within 10 days. Austin explained that Lancelot had been outvoted because PCOM had believed the ODP-TAMU engineers' estimate of 1 week for cleaning. He reiterated that milling had not been previously mentioned. Lancelot said that PCOM must be fair and that the ODP-TAMU engineers are entitled to revise their judgements. Austin stated that if PCOM wished to change the time frame for cleaning at Hole 504B, the co-chiefs must be informed.

Francis continued his report, explaining that a modified C7 RCB, the C8, will be used on Leg 140. Regarding casing inspection, Francis said that the BHTV run in the casing on Leg 137 had been successful, but that the results were difficult to interpret. The casing in Hole 504B may be split near the bottom, but no problems have been encountered. Golovchenko asked who did the BHTV interpretation. Austin replied that it had been a group interpretation aboard ship. The consensus had been that there would be no problems on Leg 140, but that future attempts at Hole 504B might be affected by casing degradation.

Francis turned to the status of DCS II and plans for Leg 142. The guidebase will cope with 25° slopes and has a re-entry cone 8 feet in diameter (Appendix 10). A counterweight keeps the cone vertical. Options for casing/spudding were shown (Appendix 10). DCS II successfully passed the slingshot test, recently conducted at Dreco in Houston. Options for core barrels and core catchers were shown (Appendix 10), as was the preliminary operations plan for Leg 142. The early November deadline for surface shipping of equipment to Valparaiso can be met. Natland asked what would happen if DCS II does not work as expected early in Leg 142. Francis replied that it might be possible to drill through the rubble using rotary coring, with a smaller diameter than previously, and deploying nested casing. Austin added that this was a fundamental point. The ODP-TAMU engineers would keep trying for the whole leg, moving the guidebase as necessary. If they do not succeed, objectives at fast-spreading ridges will be limited. Francis said that an experienced diamond driller will be taken on Leg 142.

Francis reported that DCS III feasibility studies are examining 2 options: a bottom structure (to accommodate heave) and a riser option. The reports will be completed in September and discussed at TEDCOM. It was too early to be specific about cost, but the bottom type might be cheapest.

Francis went on to discuss progress on prioritization of non-DCS engineering. A redesigned XCB shoe will be tested on Leg 141. The test will not take time away from the Leg 141 operations. A more-robust RCB version of the SCM will be taken on Leg 141. It uses an

electronic multi-shot device. A larger-diameter (7") version of the VPC is being examined by Novatek. Based on their analysis, ODP-TAMU will redesign ODP's smaller, but mechanically similar, VPC. Responding to a question from Pyle, Francis said that in order for Jack Pheasant (of BGS) to resume work on the VPC, he would have to be paid. In that case, ODP-TAMU would rather have him work on the breakaway piston head. The incentive to develop the MDCB was to drill pilot holes for GEOPROPS. The redesigned MDCB will be available for Leg 141, but there will be no GEOPROPS. Austin noted that that would be discussed later. He added that PCOM would also return to Leg 140 under Adjustments of Near-Term Program.

WIRELINE LOGGING

Golovchenko reported on new logging tools being developed or considered. The BRGM high-temperature (350°C) temperature tool will be on legs 140 and 141. It had originally been rated at 500°C, but had been downgraded to 350°C because of its cable.

A contract was about to be signed with Camborne School of Mines to develop the high-temperature resistivity tool. It should be available for December 1992 and Leg 147. The availability of money from the UK Department of Energy is uncertain. The total cost will be $300,000, of which ODP will provide $168,000. Both the BRGM temperature tool and the high-temperature resistivity tool will be ODP tools.

The Japanese magnetometer is a third-party tool. It will be used on legs 143 and 144 for A&G basement objectives. The magnetometer is a self-contained tool which is designed to be run at the bottom of the Schlumberger logging string. However, it is long and thin, and bridge breaking could damage it.

The wireline packer (an ODP tool) has proved inadequate. DMP felt that a complete redesign was necessary. Immediately following this PCOM meeting, a meeting on downhole fluid sampling was to be held in Houston, chaired by P. Worthington (DMP chairperson). A working fluid sampling tool would be desirable for legs 143, 144 and 146, but no such tool will now be available for at least the first 2 of these legs.

A log susceptibility tool would be useful on all legs for core-log integration. The resolution of the French susceptibility tool is too low. A new tool could be developed at a cost of ~$200,000, but its resolution (40 cm) would also be too low.

Discussion

Austin asked about the status of dewaring the ARCO tools. Golovchenko replied that most of those tools were old and in poor condition and that it would not be worthwhile to dewar them. This had been a SOE, but the money was put into the resistivity tool instead. Responding to a further question from Austin, Golovchenko explained that the original idea had been to dewar existing tools. However, it is now recognized that new tools will have to be developed, with associated long lead times.

912. SCIENTIFIC REPORTS OF RECENT DRILLING LEGS: LEG 138

Pisias reported that Leg 138 had begun on May 5 in Panama and ended on July 4 in San Diego, ~1 day early. So much time was saved on the leg that the co-chiefs eventually ran out of things

to do. The prospectus plan was to drill 9 sites, but 2 extra sites were also drilled. The pipe trip times had been estimated at 10 hrs, but the efficiency of the SEDCO crew was such that this was reduced to 5 hrs. Leg 138 was also fortunate in avoiding equipment losses and extra trips. All but 3 sites were triple APC'd and 2 sites were double XCB'd. The 5.5 km of core was a record and the recovery rate was 99.9%. At all sites but one, 100% recovery of the section with the APC could be demonstrated. Double XCB drilling recovered only about 75% of the section.

Leg 138 drilled north-south transects (Appendix 3) across the equatorial current system. The record obtained extends back to ~17 Ma. No sites recorded the influence of the California Current. Pliocene sedimentation rates were low and results of Leg 138 cannot, therefore, be linked to those of Leg 108, where recovery was mostly Pliocene.

Sharp oceanographic gradients are recorded in the surface sediments and the goal of Leg 138 was to extend the record back in time. TECP had felt that the tectonics of the region were well understood. However, Leg 138 obtained the same basement age at all sites and this does not match existing tectonic reconstructions. Objectives of Leg 138 while at sea were to monitor coring to ensure recovery of 100% of the sections and to develop a high-resolution stratigraphic framework, so that sites can be interrelated. The sampling strategy for high resolution stratigraphy will be developed onshore. The scientific party wished to avoid indiscriminate sampling at intervals of a few cm, since many of the thousands of samples involved would not be useful. About 50% of the scientific party had their sampling needs filled aboard ship The remainder of the sampling will be conducted onshore.

Multi-sensor tracks, including color reflectance, were plotted on barrel sheets (Appendix 3) and as large-scale, colored charts. Color reflectance provides very high-resolution variability. (Reflectance was averaged over 2 cm circles on the split core, at spacings of 3 cm.) The shipboard Vax computer did not work well, but fortunately extra Sun computers had been brought aboard by the co-chiefs to handle the load.

The general drilling strategy was for the A hole at each site to be the mudline core. The B hole was APC'd and drilled to basement. Then the site was double APC'd (C and D holes). The D holes were not sampled aboard ship. The logging period provided an opportunity to examine results from the B hole to ensure overlap of cores. It also gave a respite to the sedimentologists, who were under great pressure to keep up with the flow of cores. Susceptibility, GRAPE and reflectance were combined for the B, C and D holes to demonstrate overlap of cores. Some gaps remained at one site, even with triple APC coring, because of heave. The XCB left more gaps. It was found that composite sections tended to be stretched (e.g., a section with a true thickness of 100 m yielded 110 m of core) for reasons which are not clear. Core-log integration was used to remove the stretch.

Magnetostratigraphy gave one level of stratigraphy. Increased resolution of sedimentation rates resulted from the continuity of the section and focussing of biostratigraphic sampling. Only one hiatus was found in Leg 138 cores.

Discussion

Austin asked about the problems with the shipboard computers. Pisias replied that the IBMs were not standard and remained unused by the scientific party. Macintosh computers were

preferred. Too many processes are carried out on the Vax, which was overloaded. This problem was alleviated because extra Suns were aboard.

Cowan asked Pisias for his opinion of the suitability of an alternate platform for "routine" coring for paleoceanographic research. Pisias replied that he would have concerns about a smaller platform. Sea state affected results, even on the *JOIDES Resolution*. Furthermore, a smaller ship would need the capability to do the work and plan sampling. In response to a question from Francis, Pisias noted that the multi-sensor track can only be produced on a large ship. He added that the leg had produced ~5.5 km of core and that it would be difficult for the paleoceanographic community to handle more. Furthermore, proper site surveys are required. Therefore, Pisias questioned the desirability of giving the drill ship to the paleoceanographic community for 2 years. Lancelot suggested that this might still be feasible if, after the pioneering paleoceanographic work, the community selected, and focussed on, particular intervals.

Austin asked how many cruises like this one the paleoceanographic community could handle, even with unlimited funding. Pisias answered that he was not sure, since several groups in the paleoceanographic community were not represented on Leg 138. He noted that Leg 138 had taken 4 years of effort from the co-chiefs to date. Natland said that the same overloading of the community occurred when high rates of recovery of complex igneous rock were obtained. Austin commented that it might be argued that it was important to collect as much data as possible, put it in an archive (as NASA does), and wait for the funding to study the data at a later date. However, Pisias felt that approach would result in a great deal of waste and stressed the need to plan. He stood by the opinion expressed in the LRP that involvement of a broad-based community in ODP is best. Taylor characterized Leg 138 as a good example of bottom-up science. Lancelot said that probably only 4-5 people did most of the work and that Leg 138 did not use the whole paleoceanographic community. In any event, the paleoceanographic community would not expect to monopolize even an alternate platform for 2 years.

Natland asked about Leg 138 publications. Pisias replied that the Initial Reports would probably be published in 2 volumes. Natland remarked that Leg 138 would have a fiscal impact on publications. Taylor suggested using microfiche, but Pisias felt that this would not be a good way to display multi-sensor plots.

Goerlich asked whether the paleoceanographic community was large enough for its tasks. Lancelot responded that there is a definite lack of stratigraphers. Pisias commented that one of the coring technicians had been an illustrator and had proved very helpful in that capacity. However, the biostratigraphers had to do all of their own sample preparation. There are 3 parallel chains of command aboard the *JOIDES Resolution* and the problem is that the scientific party cannot control the technicians. Lancelot agreed that there is little flexibility built into the system. Goerlich asked whether it would help to add 2 technicians to the shipboard party. However, Francis noted the limit set by the number of berths available (51). Pisias added that the situation had not really hampered science. Natland reported that, at the last co-chief's meeting, the opinion had been expressed that there were too many things going on aboard ship to enable co-chiefs to be fully involved in the science. Mutter asked why there had been so many scientists on Leg 138 (31). Pisias replied that this was partly due to the onset of USSR participation. However, he added that it would have been difficult to have managed with fewer, without delaying processing and sampling.

Wednesday August 21, 1991

913. Report of Co-Chairs (or representatives) of Liaison Groups (continued)

FEDERATION OF DIGITAL SEISMIC NETWORKS

Purdy (JOIDES co-chair of the JOIDES/FDSN liaison committee) described the goal of establishing an Ocean Seismic Network of ~15-20 permanent, broadband ocean floor seismometers (Appendix 11). This will be a phased effort. The scientific objectives are: to enhance global coverage and resolution of tomographic images of the earth's interior, to provide for the first time pure-path observations in oceanic lithosphere to improve knowledge of the structure of oceanic lithosphere and upper mantle, to improve the ability to define source mechanisms in areas not adequately sampled and azimuthally covered (e.g., west coast of US), with subsidiary goals including studying oceanic crustal structure, providing tsunami warnings, and better understanding mechanisms of long-period noise generation in the deep ocean. The OSN-1 pilot hole (Leg 136) has served as a catalyst to the program.

FDSN was formed in 1986 to develop common standards in data acquisition, quality and location of stations. Its membership, 4 working groups and members of the JOIDES/FDSN liaison group, are listed (Appendix 11). The FDSN-OSN liaison committee met in Vienna on August 13, 1991 and discussed plans for the FDSN meeting on August 15 (Appendix 11).

The meeting also reviewed options for the use of the OSN-1 pilot hole. A French group will place a British-designed sensor in Hole 396. The system should have been proved by spring 1992 and might be placed in OSN-1. A disadvantage of this system is that it is completely dependent on the NADIA re-entry system and the submersible *Nautile*. The meeting also established the need for improved international communication. At present, the program is at the mercy of the French ship schedule. It would be preferable if, e.g., a US re-entry system could be used to deploy a French seismometer. The Japanese effort does not have funding in place at present, but they have placed a broadband sensor in the Japan Sea. They are still the only group to have deployed a working sensor, but some of the results obtained are unusual. In the US, a proposal is pending with NSF to prepare an alternative sensor; another proposal will be submitted toward the end of the year to support the necessary fieldwork. Purdy felt comfortable that OSN-1 would achieve its objectives.

The FDSN-OSN liaison committee also discussed the proposed OSN-2. Purdy informed PCOM that he is a co-proponent of the supplemental science proposal to drill OSN-2 on Leg 145 and that he did not wish to abuse his position at this meeting. However, the group strongly supported the proposal. It fills in a gap in the global system and is close to the region of intense seismic activity associated with the trenches of the northwest Pacific.

At the FDSN meeting on August 15 in Vienna, OSN-1 was enthusiastically received (Appendix 11). ODP has affiliated itself with another geosciences community. A formal resolution in support of the OSN-2 S-proposal was unanimously adopted (Appendix 11). FDSN proposed increasing the size of its representation on the JOIDES/FDSN liaison committee from 2 to 3 because of a desire to broaden international participation. Purdy suggested that JOIDES do likewise, adding that a Japanese representative would be ideal.

Discussion

Duncan asked about the status of the US wireline re-entry system. Purdy replied that F. Spiess's system had been used already as a one-off venture. The concept has been proven and the technology exists. Spiess is now converting the system into one that can be used routinely. Austin, noting that ship scheduling is always a problem, asked whether servicing the seismometers would be feasible, in light of the difficulty already encountered in scheduling placement of a seismometer. Purdy replied that servicing the full system of 15-20 seismometers once/year would require 200-250 days/year of ship time. Servicing would not be carried out by a single ship; some stations will be operated by different countries. The estimated cost of servicing will be $3-4M/year.

Natland, noting that 3 groups are developing seismometers, asked whether OSN-1 will be a test site for all 3. Purdy answered that it would, adding that alternative solutions should be explored, though better coordination is required. For example, not enough is known about the Japanese experience in the Japan Sea. Duncan asked what review process was in place to prevent someone getting a seismometer stuck and ruining the OSN-1 hole. Purdy replied that there is a JOIDES policy of review by PCOM prior to any such operation.

Mutter asked what improvement in resolution was gained by filling in one gap in the global seismometer network. Purdy answered that it depended what was meant by resolution. To gain a significant improvement, all gaps must be filled. However, for source mechanism studies, one station can have a huge effect, depending on its location. Mutter then asked whether a priority plan existed for filling the gaps in the seismometer network. Purdy replied that no such plan existed and that the current priorities are the pilot experiments, technical problems and taking advantage of opportunities to get suitable holes in place for when the technology is ready. A priority plan will be developed in the future.

Natland asked how soon OSN-2 could be used. Purdy said that it would not be within the next couple of years. The Japanese are very interested, but activity will depend on funding. Responding to a further question from Natland, Purdy said that Site 396 is a potential OSN hole. Natland asked whether that meant that no OSN proposal should be expected in the future for that part of the Atlantic. Purdy replied that he could not be certain. There are many questions to be answered concerning coupling of the sensor to the hole and water flow noise. The latter is the result of convection caused by heat from the sensor's electronics. It might mean that shallow holes (50-75 m) will be required, with the sensor cemented at the bottom of the hole. If so, Site 396 might be difficult to work with.

Taylor asked how anyone can know the best hole to drill when the best site conditions for the instrument are unknown. Purdy agreed that the characteristics of the ideal hole for seismometer deployment are unknown and would remain so until 5-10 years of data collection from several observatories (Phase 2) had been completed. The answer might vary with environment. It's a trade-off. The first guess might not be optimal, but it is a site OSN can use anyway. It is known to be essential to get into hard rock basement, but it is not known how far. Taylor asked whether it would be sufficient to simply bury an instrument in the seafloor. Purdy replied that information is needed from comparisons of the OSN-1 sensor results with those from other sensors (e.g., on land, or buried in seafloor). The answers will not be known for a long time, so the plan is to proceed with reasonable judgement.

Lancelot asked how many existing DSDP/ODP holes OSN can use. Purdy replied that only 2-3 are possibilities in areas not covered by the global seismometer network; hole conditions are

questionable. Responding to a question from Beiersdorf, Purdy said that the results of the DARPA experiment (DSDP Leg 91) were useful, but were all in too high a frequency band.

Austin said that he had allowed OSN discussion to continue as it bore on the next issue, that of Supplemental Science proposals. Purdy was asked to leave the room because he was a proponent of one such S-proposal.

914. Supplemental Science Proposals

Austin recalled that Supplemental Science proposals (S-proposals) were originally discussed at the 1990 PCOM Annual Meeting in Hawaii. They were a renewal-based concept, designed to open up ODP to a broader community. PCOM passed 2 motions and a consensus advertising the possibility of supplemental science, describing the timing for submission of S-proposals, and noting that PCOM would consider scheduling up to 10 days of supplemental science during legs 141 to 147 (Agenda Book, blue pages 12-13).

There had been some concern that the system would be inundated with proposals, but only 3 were received. Austin commented that PCOM might consider what that low number meant. The aims of the S-proposals are given in the Agenda Book (blue pages 13-20). The S-proposals are all very different scientifically. All have some measure of thematic panel support.

S-1: Navy Fan

S-1 (Appendix 12) proposes 6 days of APC coring at 3 sites, to a maximum depth of 150 m. Austin noted that the duration proposed for S-1 exceeds PCOM's original 4-day limit for supplemental science on a single leg.

Taylor commented that time is taken from legs, rather than added to them. Austin explained that the FY92 schedule had already been set when the policy on supplemental science was adopted, with the proviso that leg length would not be increased. The minutes of the Hawaii PCOM meeting imply this, though it is not stated in the motions. Taylor said that, in that case, supplemental science had to be judged against the science that it would replace.

Natland suggested that PCOM might also want to consider 2 other items: W. Sager's request to extend basement drilling on Detroit Seamount and ODP-TAMU's request for a test of the *JOIDES Resolution's* shallow-water drilling capability on Enewetak. Austin replied that the first was not an issue, since he had told Sager to discuss his plan with the co-chiefs. The second is an issue for PCOM to discuss.

Mutter asked if what would be replaced by the supplemental science was known. Austin answered that it was. The S-1 sites are located off San Diego. SGPP endorsed the science, but wanted it to come out of (hard-rock) Leg 147. However, it is more probable that Leg 146 (CA) would be impacted (Appendix 12). S-1 would have to be drilled *en route* to San Diego at the end of Leg 146. Francis pointed out that the sites were in Mexican waters (Appendix 12) and that *JOIDES Resolution* would have to put in to San Diego to pick up Mexican scientists. Austin said that S-1 would take at least 1 high-priority site from CA.

Von Rad reported that SGPP had not been very excited by S-1. It would require more like 0.25 - 0.5 leg to do properly. SGPP is very interested in CA and will not want to give up any sites. Swart added that the S-1 sites would involve drilling and coring in sand, for which the technology was not available. Austin commented that the lack of fluid sampling technology meant that the same could be said of CA.

Lancelot said that S-1 fails to involve a different community and that the science is poorly defined. Swart recalled that the S-1 was originally submitted as a low-rated, full-leg proposal. However, Taylor felt that the deep-sea fan community had been disenfranchised by ODP and that they could gain by this small effort. Austin stated that the site survey data for S-1 are poor and that other fans have better data sets. Von Rad believed that a 2-4 day program would not do justice to the problem. It needed more time. Austin informed PCOM that, whatever the outcome of the discussion, PCOM must justify itself. He would request write-ups for motions.

Lancelot did not think that the deep-sea fan community had been disenfranchised, except by their own doing. They had been very strong within DSDP. He did not believe that S-1 was what PCOM had had in mind. Austin noted that S-1 must also be judged against what would be lost. It would be up to the co-chiefs to choose which site(s) to drop. Mutter remarked that it was difficult to make a choice without knowing which site will be dropped. Taylor felt that S-1 was not popular with PCOM and suggested calling a motion to drop it. However, Austin said that he would rather discuss the other two S-proposals and then consider such a choice.

S-2: LOGGING HOLE 801C

Austin drew PCOM's attention to thematic panel comments on S-2 (Agenda Book, blue pages 15-17) and related correspondence from Winterer (Leg 143, A&G co-chief: Agenda Book, white pages 191-192) and Larson (S-2 proponent, correspondence handed out at meeting). Austin explained that Winterer wrote to express his feelings about S-2 and then Larson felt that he deserved equal time. S-2 logging operations would take ~3 days when *JOIDES Resolution* is *en route* from the Marshall Islands to MIT Guyot (Appendix 12). The likely loss would be some level of basement penetration at some site, to be determined by the co-chiefs.

In response to a question from Watkins, Francis said that the ODP-TAMU proposal to test shallow-water drilling capabilities at Enewetak could take place on either Leg 143 or Leg 144. Austin added that, in addition to its engineering benefit, the co-chiefs are interested in the proposed Enewetak shallow-water drilling, in contrast to their feelings about S-2. Duncan commented that the decision of what science to drop should not necessarily be left up to the co-chiefs, who might not represent all objectives. It might be necessary to go to the panels. Austin agreed and Duncan continued that, if a thematic panel supports an S-proposal, it should nominate part of the relevant leg, within its area of interest, that they would be prepared to eliminate. Austin pointed out that the S-proposals were reviewed by the panels, who knew that there would be losses to legs. Natland reported that Winterer felt that the time would be taken from operations at Seiko.

Lancelot announced that he was not a proponent and that S-2 had originally been part of a full proposal which had not been highly ranked. Watkins felt that S-2 sent a "good old boy" message and does not involve a new community. However, Austin thought that it was unfair to exclude people who have been involved in ODP: the *Eos* advertisement detailing supplemental science did not stipulate that. Natland believed that there was a need for logging of old crust in the Pacific, but that the holes should be deeper than Hole 801C.

Cita-Sironi favored S-2, characterizing it as short and ready to go. She added that A&G got 2 legs and can afford to lose 3 days. However, Taylor noted that 3 days was 8% of the on-site time on either leg. Furthermore, most of the holes are paired: if one is removed, 2 are effectively lost. Jenkyns said that the more discussion he heard, the more he worried about the whole scheme unless the co-chiefs really go along. Cowan stated that scientific merit is the main criterion and suggested throwing the question back to the DPG. Austin pointed out that the DPG no longer exists, but Cowan felt that communication by fax would be sufficient to enable them to define a decent leg. However, he added that he was not sure that either S-1 or S-2 was the best S-proposal.

Natland commented that it might be possible to accommodate S-2 depending on the progress of the A&G leg. He suggested making it an alternate. Austin noted that the Hole 801C logging must, however, be done before the end of the leg. Natland said that it would only be possible if the leg got well ahead of schedule. Tamaki agreed with Natland. However, Francis thought that recovery problems associated with A&G drilling would cause S-2 to fall by the wayside if it was left as an alternate. Austin felt that PCOM should not pass the decision back to the co-chiefs.

S-3: OSN-2 Cased Re-entry Hole

Austin declared that S-3 does involve a different community (Agenda Book, blue pages 17-19). The location for the proposed OSN-2 hole is right next to NW-1A, to be drilled on Leg 145 (Appendix 12). However, Austin noted that proposed, enhanced basement drilling (W. Sager proposal to co-chiefs) would probably occur early in Leg 145. Austin also drew PCOM's attention to OHP's comments about S-3 (Agenda Book, blue page 18): that the proposal was of "no OHP interest", that OHP would be "very concerned" to see time taken from an OHP leg for this project (essentially outside ODP), and that S-3 would reduce further the already small number of drilling days on Leg 145.

Duncan stated that LITHP should decide between basement drilling objectives and OSN-2. Lancelot felt that PCOM should decide on this issue, since S-3 is outside ODP's thematic framework. Austin, however, observed that LITHP and TECP had been very supportive of S-3 and that S. Humphris (LITHP chair) had told him that S-3 was more important than basement penetration scheduled for Leg 145.

Francis said that, all going well, all that could be accomplished in 4 days would be to drill 315 m of sediment and case the hole. There would be no time to penetrate basement further. Natland pointed out that there is a re-entry cone on Suiko Seamount, but Lancelot responded that FDSN wishes to place their seismometers in oceanic crust and not on a seamount. However, Taylor said that some are on islands and that Suiko fills a gap in the global seismometer network. Von Rad asked whether 10-15 m basement penetration would be enough. A sill might be encountered, for instance. Furthermore, OSN-1 has not been used yet. He questioned giving FDSN another hole. Natland responded that the crust at NW-1A was almost certainly normal oceanic crust and that the Japanese have already tested an instrument.

Austin recalled that in discussing OSN-1, PCOM's philosophy had been to give one hole to FDSN and see what they do with it. They have not yet come through. In addition, if ODP gives them a second hole, FDSN might apply every time *JOIDES Resolution* enters a gap in the global seismic network. Duncan agreed that if good results had come out of OSN-1, PCOM

would support OSN-2. However, the tests have not been performed. Cowan countered that PCOM had known that results from OSN-1 would take time. Lancelot added that FDSN has learned a great deal and benefitted from the first hole. Furthermore, if OSN-2 is drilled, the French ship schedule would be altered. Austin commented that S-3 is the only S-proposal in the spirit of the original PCOM intent for supplemental science.

Mutter voiced the opinion that concerns about FDSN's technological readiness were a red herring. He drew an analogy with ODP, which is very dependent on DCS. Mutter was confident that FDSN would place the seismometers, but felt that OSN-2 should not be stuffed into an existing leg.

Natland remarked that drilling OSN-2 would provide a boost to the Japanese program. Taylor suggested having an instrument on the *JOIDES Resolution*, which could be deployed without the necessity of returning to the site. Lancelot responded that the instrument deployment can be done from a different ship. Drilling OSN-2 would help the French to get funded. Watkins noted that the proposed site is in a remote part of the world and that it would be a long time before the drill ship returned to the region. Tamaki thought that FDSN should make a global priority plan before ODP drilled another OSN hole.

Cowan asked if a "mini-leg" were feasible. Francis replied that it would increase the problems associated with leg length and also introduce an extra port call. Mutter noted that there have been short legs in the past. Austin pointed out that a mini-leg would cost ~$2M. Furthermore, it would set a precedent and more mini-leg proposals would be received. Natland observed that, if ODP must operate within the framework of ~55 day legs, mini-legs must take away time from other objectives. Austin added that, in any case, the Program Plan for FY92 has already been approved, so that a mini-leg could not now be included in the FY92 schedule. Francis expressed the belief that the goodwill of SEDCO and the support of the technical staff are very important to the success of ODP, more so than the opportunity to add the odd mini-leg.

GENERAL DISCUSSION

Austin stated that PCOM had now looked at S-proposal science and, to some extent, at what science would have to be subtracted as a consequence. He asked whether PCOM should choose an S-proposal for drilling, adding that there was still time to involve the panels as well as the co-chiefs, in deciding what to subtract. However, PCOM must ultimately decide.

Natland favored OSN-2 (S-3) because of the level of thematic panel support of the science and the involvement of a new community (with potential for long-term commitment). The other S-proposals received less thematic panel support. Watkins agreed. However, Swart stated that SGPP had strongly supported logging Hole 801C (S-2). Swart favored S-2. It was important to log this hole in the oldest oceanic crust drilled and A&G can accommodate the time. He expressed concerns that FDSN had not yet used OSN-1 and that it was still uncertain whether emplacing a seismometer in a borehole was better than burying it. Duncan liked S-3 most, but felt that it was premature to drill a hole when it was not known whether OBSs might be as effective. Lancelot supported Natland and S-3, adding that FDSN does have a plan. OSN-1 was to test feasibility and design of the coupling between instrument and rock. OSN-2 gives an opportunity to the Japanese or French to deploy an instrument in a scientifically rewarding area. Austin suggested that PCOM could request a prioritized plan from FDSN, even if OSN-2 is scheduled.

Crawford said that 3 panels had high interest in S-2. He preferred S-2, but it was hard to balance against the science to be subtracted. Austin responded that PCOM cannot go further in characterizing the science to be subtracted without going back to the panels. Natland commented that the thematic panel support for S-2 was equivocal. Hole 801C should be deepened before further logging will be worthwhile. Von Rad noted that S-3 would occupy 10% of the drilling days of NPT (Leg 145). S-3 should not, therefore, be drilled.

Curry suggested that shifting Leg 145 basement objectives to OSN-2 might provide enough time for OSN-2 to be drilled without impacting OHP objectives. Mutter agreed, adding that his personal ranking of the S-proposals would be: S-3, S-2, S-1.

Austin commented that he was sensing that S-1 was out of the running. There was general agreement on this point. It was felt not to be strong scientifically. Lancelot recalled that PCOM had been prepared to allocate up to 10 days of supplemental science in FY92. Failure to allocate 4 days would send a bad signal. Austin agreed, noting that, at the Hawaii meeting when supplemental science was first discussed, Tucholke had stressed that if PCOM raised the possibility of supplemental science, some days would have to be scheduled. However, Austin added, supplemental science need not be done forever. Mutter felt that if PCOM were to discontinue supplemental science it would be showing that PCOM cannot run ODP. Austin disagreed: supplemental science was an experiment. The JOIDES Office might still receive 50 S-proposals next year. Blum pointed out that some S-proposals had already been received for Atlantic drilling and that he had had to inform proponents that they had submitted them too early. Austin noted that PCOM had said that S-proposals need not be consistent with leg themes and that this affects staffing. Francis explained that this was not a problem with S-3, since OSN-2 was essentially an engineering effort. Mutter added that that was also the case for S-2.

Francis raised the issue of who would draw the line at the end of supplemental science on a particular leg, whether it had been successful or not. He asked whether OSN-2 would be left before it was complete, or whether it would be completed even if it took 5 or 6 days. Duncan asked how deep into basement OSN-2 would have to penetrate. Natland responded that that was a complex issue. OSN-2 would not be a duplicate of OSN-1. Austin commented that PCOM could request that FDSN do some tests on OSN-1 and provide drilling depths, together with a global prioritization of OSN sites.

In response to a question from Watkins, Francis said that OSN-2 would probably take 4-6 days. NW-1A will already have been cored, so that only drilling and casing will be necessary (i.e., no coring). This would include 10-15 m of basement penetration. Natland remarked that it was not easy, but was fairly routine. Austin stressed that PCOM would have to allow time for the work to be done properly and that it could take 50% longer than Francis' estimate. Mutter said that the same thing can be said of any hole within a leg: all can take twice as long as scheduled.

In reply to a question from Taylor, Francis said that his estimate of 4-6 days did not include leaving any open hole. All would be cased, including the 15 m basement penetration. There would be insufficient time to drill open hole beyond the cased section. Taylor read from the S-3 proposal, which specified drilling the sedimentary section and 10 to 15 m into basement. It was not clear about the necessity for open hole in basement. He suggested inviting Purdy back into the room to ask him. Austin agreed, but cautioned that PCOM must be careful in questioning Purdy in order not to afford him the opportunity to unduly influence the future of S-3. He

added that there is more uncertainty concerning S-3 than S-2: S-3 could take 20% of the on-site days of Leg 145 (Appendix 12). In reply to a further question from Taylor, Francis said that to drill ahead beyond the casing, into basement, the drill pipe would first have to be tripped, taking 18-24 hrs (in 5000 m water depth).

Mutter suggested assuming that S-3 would occupy 6 days and that the original 4-day estimate was wrong. Lancelot asked whether the load could be distributed among other legs, but Austin responded that that would make Leg 145 longer by 6 days. Furthermore, it would irritate a lot of people a little, rather than fewer people a lot.

Purdy returned and was asked by Austin whether the seismometer would need an open hole, or whether it could be emplaced in a cased hole. Purdy replied that an open hole was preferred. Francis commented that that would require a pipe trip, drilling ahead and cementing at the bottom of the hole. Taylor reminded Purdy that the S-3 time estimates were based on a completely cased hole. Purdy reiterated that FDSN would prefer an open hole, rather than a casing of unknown coupling. Purdy again left the room.

Austin stated that at least an extra 24 hrs would be required, and possibly even more time, to ensure a good section (suitable for seismometer emplacement). Golovchenko added that the BHTV would also have to be run. Replying to a question from Austin, Francis said that OSN-1 had taken 12-14 days. Austin said that PCOM was potentially faced with the same situation at OSN-2. Lancelot suggested asking the ODP-TAMU engineers whether it could be done in 10 days. However, Natland felt that the Leg 145 science would be too severely impacted if S-3 took 10 days, and Leg 145 would become too long if the load was distributed to other legs. Austin highlighted the problem of long transits and fewer on-site days in the FY92 program in the Pacific.

Taylor felt that S-3 had appeared to be an opportunity, but was now looking less attractive. He added that Dziewonski (S-3 proponent) had not asked the right questions about leg length. Duncan said he would have supported OSN-2 if experiments had taken place in OSN-1. However, Pyle noted that OSN-2 has been said to be of higher priority. Mutter stressed that LITHP had assumed that S-3 would take only 4 days when evaluating it. Austin agreed that "the bet is off" if OSN-2 takes 10 days. At Hawaii, PCOM had said that no S-proposal should occupy >4 days of ship time. Cita-Sironi also agreed that PCOM cannot stick to the 4-day requirement and also stick to S-3.

Cowan recalled that NPT had not been a highly-ranked program: OHP had ranked it first, but SGPP had ranked it seventh and TECP sixth. Austin added that Leg 145 was the least-planned leg of FY92 and that this was an advantage of scheduling an S-proposal in Leg 145. A&G and CA planning is much more advanced. Leg 145 is still being planned and the co-chiefs have just been named. The spirit of the understanding on supplemental science was to limit it to 4 days/leg, but that was not in a motion. He posed the question of whether OSN-2 science was justified. Mutter said that it was. Austin said that PCOM could decide that S-3 was the best S-proposal scientifically and make a motion to that effect. In that case, the other S-proposals would no longer be in the running, since PCOM is limited to 10 days of supplemental science.

However, Swart pointed out that if PCOM says that the science at S-3 is the best, then S-2's science must be very bad, since there is no science in S-3. Austin said that was a fair comment. Crawford noted that S-3's science might be potentially good, but that there was no point in considering it if it cannot be fitted into a leg. Austin stated that reliance on technology

development is part of ODP. Cita-Sironi suggested that Francis be asked to present the ODP-TAMU ideas on shallow-water drilling, but Austin preferred to defer that issue.

A series of straw votes were held which revealed that PCOM ranked S-3 highest among the S-proposals. Austin noted that a rationale would be needed for why S-1 and S-2 were ranked lower than S-3 and that he will ask PCOM to write it. In response to a question from Von Rad about the procedure of dropping S-1 and S-2, Austin said that it was an attempt to whittle down the discussion. However, Mutter observed that there was sufficient support for S-2 that he did not feel comfortable dropping it. He suggested that it be kept available as truly opportunistic in the event that something goes very wrong with A&G. Austin replied that PCOM can suggest that S-2 be an alternate when it discusses near-term planning. PCOM passed the following motion.

PCOM Motion

Upon evaluation of the three supplemental science proposals we have received, PCOM ranks the potential science return of S-3 (OSN-2) the highest. Therefore, PCOM will consider only S-3 for scheduling in FY92.

Motion Natland, second Lancelot Vote: for 11; against 1; abstain 4; absent 1

Austin asked whether, now that PCOM was only considering OSN-2, it should schedule S-3. In response to a question from Watkins, Austin said that W. Sager had presented a letter proposing enhanced basement objectives at Detroit Seamount. Austin had advised Sager that his proposal should be incorporated into the planning process being conducted by OHP and the Leg 146 co-chiefs. Pyle asked how Sager's proposal differed from supplemental science; Austin answered that it was not supplemental, but was integral to the leg. Natland added that a paleolatitude study was in the original prospectus and that Sager is simply suggesting doing it properly. He will help plan Leg 145 with OHP. Blum explained that Sager was informed of the options for getting his ideas incorporated and decided not to submit them as a supplemental science proposal. Natland acknowledged that Sager's proposal will probably be impacted if OSN-2 is drilled. Responding to a question from Taylor, Austin said that one Leg 145 co-chief will be at OHP's next meeting.

Tamaki noted that OSN-2 is far from Japan, but that it should be visited at least once/year. He would, therefore, prefer OSN-2 to be drilled further south, perhaps during Leg 144. FDSN did not need to insist on the NW-1A site. However, Natland stressed that FDSN had specified a site and that PCOM could not change that. Taylor added that it is adjacent to an existing site. Austin explained that OSN-1 had to be cored and logged, but that this will have been already done at OSN-2. If the OSN-2 site was moved, an extra hole would have to be cored. Taylor remarked that 5 of OSN-1's 12 days are already scheduled on Leg 145 (i.e., coring and logging at NW-1A). OSN-2 should, therefore, only take 7 days. Tamaki reiterated his position. Taylor responded that the Leg 144 holes are not suitable for OSN and that a new hole would have to be drilled and cored. Austin said that the philosophical necessity of coring and logging all ODP holes means that OSN-2 will take much longer if it is moved.

Cowan suggested a motion allowing a maximum of 10 days of drilling on Leg 145 for OSN-2. He said that he deliberately did not refer to S-3, since OSN-2 will require additional basement penetration not described in S-3. Austin pointed out that it must also be specified that OSN-2 be paired with NW-1A. Mutter objected that Leg 145 would be impacted by 10 days. Austin added that this was 25% of the on-site time. Duncan emphasized that PCOM must know what

science would be replaced. Austin said that PCOM could turn the issue back to the thematic panels for review and recommendations of what to cut. OHP's response can be predicted, but the responses of LITHP and TECP are important. Cowan recalled that Shackleton (OHP chair) had said, at the Hawaii PCOM meeting, that OHP was only interested in the Neogene. Austin noted that how the time is to be taken would have to be in any PCOM motion: if the time is to be distributed among more than 1 leg, Leg 145 will grow in length, while other legs will be shortened. Francis reemphasized that SEDCO and the ODP-TAMU technicians want shorter legs.

Duncan observed that if all basement objectives were removed from Leg 145, it would free 7 days (Appendix 12). However, PCOM would need to hear from LITHP and TECP that this was an acceptable exchange. Tamaki said that the most important point is to demonstrate that borehole seismometers are better than those on land. OSN-2 might be redundant if onland seismometers were deployed in the Kuriles and Aleutians. Taylor countered that such locations were not on the most desirable side of the trench. Tamaki added that maintenance would also be a problem at OSN-2. Austin responded that FDSN will never get service if they do not establish sites. ODP is in a position to provide assistance to another major international initiative to help it get off the ground. Natland remarked that Purdy had said that OSN-2 would be an important site even if land stations were available. Taylor noted that F. Duennebier (University of Hawaii) has not been able to get funding to service his high-frequency downhole seismometers, adding that OSN-2 is a remote site. However, Lancelot felt the analogy to be invalid, since FDSN was a large community. Austin stated that if ODP does nothing for FDSN, they will get nothing from other sources. Taylor questioned whether the first seismometers should be put in such remote places. Austin noted that FDSN had not chosen to place an OSN site on the CA (Leg 146) schedule. Taylor responded that the reason had been the lack of a duplicate site on that leg.

Austin felt that the case still might not be strong enough for PCOM to schedule OSN-2. PCOM could ask FDSN to provide a prioritized list of OSN sites for the PCOM Annual Meeting, and also go back to the panels for further advice. Natland raised the possibility of moving NW-1A. Duncan responded that OHP had chosen NW-1A based on the available data; Austin added that moving the site would not bring it closer to port. Jenkyns said he would prefer to defer the issue to the Annual Meeting, when panel chairs would be present. Austin stated that PCOM had made a selection: PCOM can now ask S-3 proponents to prioritize OSN sites globally and also request additional thematic panel input before making a final decision. Francis pointed out that, by deferring, PCOM was reducing the number of legs from which time could be taken, and also sending a message that only those S-proposals to be scheduled near the end of the FY have a chance if the decision is left to the Annual Meeting.

Austin, referring to the Agenda Book (blue pages 19-20), said that PCOM must decide whether it wishes to continue with the supplemental science experiment. Taylor disliked the "subtraction" concept. He felt that the issue of supplemental science must be dealt with early in the planning process, not after legs have been scheduled and when science must be subtracted. Some Atlantic S-proposals were already in the system. They could be made truly supplemental. Austin felt that S-proposals did not fit into advanced planning: they are small projects, generally unrelated to the legs to which they may be attached. Mutter asked how OSN-1 got onto the schedule. Austin replied that PCOM had been very sensitive to renewal and the impact of liaison groups. Mutter responded that it was, therefore, possible to schedule mini-legs. However, Natland pointed out that OSN-1 got onto the schedule before the Hawaii 1990 Annual Meeting, when Francis had stressed the importance of a 56-day limit to leg lengths. Austin reiterated that uneven leg lengths create problems; Francis added that every leg has more objectives than it can accommodate: co-chiefs have to make choices.

Mutter acknowledged that the proponents of S-3 should be told that PCOM likes the proposal and would like to schedule it, but that PCOM needs more information from proponents and panels. Taylor again expressed his belief that S-proposals should be incorporated early in the leg planning process. He suggested allowing submission of short proposals. Austin said that that was not supplemental science, but it would force panels to assemble legs from proposals of varying length. Supplemental science presupposes a ship track, not just a 4-year plan. Taylor said that, in that case, legs should be scheduled to last <56 days, so that supplemental science can be added. Austin asked Francis how short legs can be. Francis replied that short legs add to costs and worsen the ratio of transit time to drilling time. Natland agreed that small projects should be incorporated when a leg is planned. Austin noted that such a strategy would affect staffing.

Natland said that Leg 145 was a pieced-together leg. He thought that it would be possible to come up with 10 days out of the program. Austin said that PCOM can tell OHP to incorporate OSN-2 if it is important. However, 10 days is a lot more than 4. If S-3 had originally specified 10 days, OHP would have been more negative and LITHP and TECP might have been less favorable. Lancelot stated that S-3 did not fit within the thematic approach, so PCOM must evaluate it, not the panels. PCOM should not let OSN-2 be killed by panels with other interests. Mutter again suggested a mini-leg, but Francis replied that 2 back-to-back mini-legs would be required, or there would be no crew change and one extra-long leg for the SEDCO and ODP-TAMU staff.

Austin said that he was prepared to send S-3 back for review and also to declare supplemental science a bad experiment. Cowan read a preliminary consensus on asking the thematic panels and Leg 145 co-chiefs for further input. Curry asked whether it removed the option of shortening other legs. Austin replied that he believed that it did, but that the decision had not yet been made. Natland stressed the need to find out what was needed at a minimum to make Leg 145 a success. Austin said that it would be important for PCOM liaisons to thematic panels to stress the need to know how Leg 145 would be impacted first, without shedding the load to other legs. Responding to a question from Cita-Sironi, Austin stated that S-3 proponents would have to consult with Francis to determine refined time estimates. Natland suggested a straw vote on the idea of taking 10 days from Leg 145. Cita-Sironi reiterated that that contradicts the 4-day limit. Austin countered that that limit had been a consensus, not a motion.

Austin asked to hear from those opposed to S-3. Curry felt that 10 days was an extreme impact on Leg 145 and that it was bound to impact OHP objectives, not just those of LITHP and TECP. He added that he would be in favor of S-3 if it took only 4 days. Swart agreed and felt that the preliminary consensus read as though PCOM had already decided. Austin agreed that a modification to the consensus was in order: the objective is to ask the panels and co-chiefs about the 10-day limit. Mutter commented that PCOM already knows that OHP's answer will be strongly negative. Austin responded that PCOM is asking LITHP if it will give up basement objectives for S-3. It is possible that OSN-2 can be completed using only time from LITHP objectives. Lancelot said that he hoped that OHP would respond with something more constructive than "no way", and that it will evaluate its objectives: NPT is still weak. Austin reiterated that LITHP was the key. He felt that LITHP was more interested in OSN-2 than in basement objectives. Swart noted that if all of the time was taken from basement objectives, the flexibility to drill extra sites would be removed. Taylor remarked that the basement objectives could be alternates. Austin reminded PCOM that it had not yet scheduled S-3. Natland felt that if S-3 strangled OHP's objectives, then it should be dropped. However, by dropping basement objectives and weaker science, there should be time for OSN-2. PCOM finally reached the following consensus.

PCOM Consensus

In order to decide at the Annual Meeting whether to reserve a maximum of 10 days during Leg 145 for drilling a re-entry hole, OSN-2, paired with NW-1A (Supplemental Science Proposal S-3), PCOM asks the thematic panels and co-chiefs for Leg 145 to determine which sites would be modified or dropped to accommodate up to 10 days at OSN-2.

Austin emphasized that PCOM would have to take a stand on the continuation of supplemental science. The concept had been introduced to try to involve other earth sciences groups, but this did not seem to be happening. In response to a question from Malfait, Blum reported that 3 Atlantic S-proposals had been received to date.

Natland suggested encouraging submission of short proposals, based on the 4-year plan, that could be incorporated into legs at the planning stage. Cowan agreed with Natland, adding that he would hate to see FDSN lose all opportunity to get holes drilled. Austin pointed out that short proposals could not be received early in the planning process and still have a cut-off date. OSN-2 could not have been submitted until the ship track had been established. Lancelot suggested simply stating that proposals need not be for whole legs, though he acknowledged that this would not be supplemental science as PCOM had originally wanted it. PCOM should advertise that a single site can be proposed. Austin noted that new proposal guidelines had just been published, but that panels will rank short proposals with little supporting data poorly.

Cita-Sironi suggested continuing the supplemental science experiment for one more year. The time required for S-3 is longer than was originally presented and it affects a planned leg, but supplemental science should not be written-off altogether. Cita-Sironi expressed support again for S-2. Blum agreed that a 1-year experiment with supplemental science was not enough. Austin reminded PCOM that the supplemental science concept originated at the last Annual Meeting. He could have it discussed at the PANCHM meeting preceding the next PCOM Annual Meeting. PANCHM may characterize it as a mistake; it also makes more work for panels. They would have to incorporate short proposals into legs. Mutter stressed the importance of developing a mechanism other than trying to stuff supplemental science into already-scheduled programs. Austin acknowledged that panels should have been asked to evaluate what science could be dropped when they evaluated S-proposals. He added that PCOM could say it was discontinuing S-proposals, but that it still encouraged the submission of short proposals. Blum commented that this is not supplemental science.

In conclusion, Austin noted that PCOM is unhappy with the concept of supplemental science; the minutes will reflect that. PCOM also passed the following motion.

PCOM Motion

PCOM moves to discontinue the practice of accepting "Supplemental Science" Proposals (as defined by its motion and consensus of December 1990). However, continued submission of proposals requesting less than 1 leg of drilling is encouraged. Such proposals will be ranked in accordance with normal ODP review procedures.

Motion Taylor, second Natland — Vote: for 13; against 1; abstain 0; absent 3

915. OPCOM

Austin recalled that, at its April meeting, PCOM heard of the availability of an extra $2.1M for the purpose of furthering the objectives of the LRP. At that time, PCOM decided to set up the Opportunity Committee (OPCOM) to discuss ways of using the extra funds, and wrote the OPCOM mandate. OPCOM met at JOI, Inc. on June 7. Minutes are included in the Agenda Book (white pages 173-185).

OPCOM decided to consider the funding increment as a step function for FY92 and FY93. It concluded that the DCS was the most important project to be funded during this period, and that DCS testing should be carried out aboard *JOIDES Resolution*, the platform on which it will be deployed. $1.9M was allocated to the DCS (spread over the 2 years FY92 and FY93). OPCOM discussed whether this was too much for ODP-TAMU to use effectively and decided that it was not. OPCOM's second priority was logging and fluid sampling and its third was alternate platforms. OPCOM recognized the need for a feasibility study on alternate platforms; Austin has contacted a consultant, H. Zaremba. He is willing to carry out the study, even though funds will not be available before October 1 ($100,000 has been allocated). Zaremba will be at TEDCOM's fall meeting and estimates that the study will take 6 months. OPCOM decided that the best use of alternate platforms would be in association with existing programs (e.g., A&G and New Jersey sea level). Finally, OPCOM acknowledged that its decisions have staffing implications for ODP-TAMU. PCOM must now decide on these recommendations.

Discussion

Natland pointed out that deep drilling had been in OPCOM's original mandate, but was not apparently considered by OPCOM. This is also in the LRP and PCOM should look at this now. Austin responded that the DCS is tied to deep drilling. Natland noted that the thematic panels had been asked to prepare targets for deep drilling. Alternate platforms might be required if the targets are beyond the capabilities of *JOIDES Resolution*. ODP-TAMU should hire an engineer to consider the panels' deep drilling targets. Austin replied that TEDCOM will consider the issue and Zaremba will be there for alternate platform advice. More information is required on alternate platforms: there is not enough to go on, at present, to justify hiring an engineer. Natland recalled that TEDCOM had recommended having someone study deep drilling at ODP-TAMU. Austin stated that Zaremba will get continued exposure and information from the ODP system. Austin's total contact with Zaremba has only been 2 phone calls and a letter to date. It was necessary first to find out whether he was interested. PCOM can give him input and he will do what is requested. Furthermore, he will not have a mandate if PCOM does not approve of him. Natland reiterated that he would like to see more action on deep drilling. He felt that PCOM should commit to some sort of study of deep drilling, or it will be admitting that it will not be addressing a LRP objective in the stated timeframe.

Taylor pointed out that the first step in deep drilling (as stated in the OPCOM mandate, Agenda Book, white page 51) is to maximize the capabilities of the *JOIDES Resolution*. ODP has not yet even drilled to 2000 mbsf. Austin stated that maximizing those capabilities is an issue of "community will"; PCOM will have an opportunity to discuss it in December in connection with the FY93 Program Plan. *JOIDES Resolution* has a dynamic 7.3 km string length. Therefore, a 2.5 km hole in 4 km of water is feasible if the ship is left on site long enough, and that is a PCOM decision. Mutter asked about the timeframe of Zaremba's study. Austin replied that PCOM has to set his mandate. All that has been done so far is to contact him. Responding to a further question from Mutter, Austin said that PCOM will have to consider deep drilling

issues in December in conjunction with the decision of whether to schedule legs from NARM-DPG. Maximizing the capabilities of *JOIDES Resolution* involves decision making, not engineering. The community has displayed no will to allow the drill ship to sit on one spot for extended periods. Cita-Sironi asked how long it would take to drill a 2 km hole. Austin replied that NARM-DPG estimated 48 days to drill 2.5 km, including logging. Taylor noted that Site 793 (~1700 mbsf) took ~0.5 leg, though he believed that Nankai involved the longest continuous occupation of a single site.

Returning to the question of Zaremba's study, Austin was unsure as to whether he can extrapolate beyond existing technology. A different person might be required for the longer-term future. Lancelot stated that TEDCOM agreed that deep crustal drilling is an unknown and that ODP must think in different terms. Francis added that there are different types of deep drilling. Crustal drilling to 6 km (Moho) is currently impractical. Drilling to 2.5 km (as recommended by NARM-DPG) is achievable now and ODP-TAMU has the necessary personnel. Austin stated that it was still an open question as to whether ODP should get involved in such drilling. Natland asked what PCOM's course should be. Taylor reiterated that Natland had noted that deep drilling was not specifically covered by OPCOM's recommendations. Watkins responded that deep drilling was subsumed under DCS.

Austin asked whether there was any disagreement with OPCOM's first priority: DCS. Swart asked whether there were any checks to prevent DCS becoming a "bottomless pit". Mutter commented that the objective is to accelerate development of DCS, not throw money at it. Austin reported that a hearing on DCS would be held in October. Mutter noted that DCS is not equivalent to deep drilling: other routes to deep drilling might have to be followed. Austin remarked that Natland's proposed modification to the OPCOM recommendations to include hiring an engineer arose in part because TEDCOM did not want to do the job. However, Francis felt that to be unfair to TEDCOM, who do provide outside information. Austin observed that SGPP had not provided information on deep sites for TEDCOM: both LITHP and TECP have provided such information.

Austin asked about OPCOM's second recommendation on logging and fluid sampling. Golovchenko noted that the high-temperature resistivity tool was to be developed by Camborne School of Mines and that a meeting was scheduled in Houston, immediately following the August PCOM meeting, to discuss downhole fluid sampling. Von Rad asked whether that meeting would include discussion of GEOPROPS. Francis answered that it would. Pyle reported that discussions had taken place with the US Department of Energy, who will provide money for a high-temperature sampler for borehole fluids (as opposed to formation fluids). In response to a question form Cowan, Austin said that the wireline packer had cost ~$200,000. Lancelot asked whether it had been OPCOM's philosophy to try to put money where the need will be most urgent in FY92 and FY93. Austin replied that recommendations 2-5 had not been prioritized: only recommendation 1 (DCS) was prioritized.

Regarding recommendation 3 (alternate platform feasibility studies), Austin reported that alternate platforms were considered for DCS testing. OPCOM's feeling, however, had been that DCS should be tested on *JOIDES Resolution*. Austin had made the recommendation at OPCOM that it would be best to consider alternate platforms in the context of existing highly-ranked programs.

Natland asked if there was any real chance of getting an alternate platform for A&G in FY92. Mutter remarked that alternate platforms would lack *JOIDES Resolution's* labs. Austin responded that that was the point of using an alternate platform when *JOIDES Resolution* is in

the vicinity. Lancelot commented that R. Ginsburg had used a platform without laboratory facilities in the Bahamas. Mutter stated that what was being discussed was an additional platform, rather than an alternate platform.

Von Rad felt that extended discussion of the OPCOM recommendations was unnecessary, characterizing them as good recommendations for the near-term future. Austin acknowledged that OPCOM might have slighted long-term deep drilling. However, the question was whether PCOM should start long-term planning now or not.

Natland read the following addition to the OPCOM recommendations, which could be added to the OPCOM recommendations as a new item 4 (displacing the original item 4 to item 5 and the original item 5 to item 6):

4) Recognizing the long-standing commitment of the scientific community to develop the means of drilling holes 4-6 km deep in 2-5 km of water, PCOM recommends that JOI, Inc. use the most effective route to commission a feasibility study to accomplish such drilling, based on target specifications now being prepared by the several thematic panels. PCOM anticipates a funding level of $0.1M in each of FY92 and FY93 for this item.

Austin said that this was not a motion, but a modification to an existing set of recommendations. There only needs to be discussion of this, since OPCOM was an internal subcommittee of PCOM. The recommendations will eventually go to JOI, Inc. and NSF. If PCOM is comfortable with this new recommendation, it will simply be added to the list. Mutter felt it to be a good addition. It would require $200,000 to be taken from one of the other recommendations. Austin stated that old recommendation 4 (now item 5) was the "sponge" and that the $200,000 could be taken from that (reducing the $1.7M of unencumbered FY93 funds to $1.5M). He added that Natland's modification would be included in the OPCOM recommendations.

Mutter noted that the mandate of the alternate platform study should be addressed, for recommendation 3. Austin said that he would be guided by PCOM. Zaremba perceives his job as that of augmenting the capabilities of *JOIDES Resolution* for near term programs, but that the mandate had not been defined. Mutter raised the possibility of asking Zaremba to consider the longer term. Austin said that he would be able to ask Zaremba at TEDCOM. Taylor suggested modifying the OPCOM recommendations by replacing the term"alternate" platforms with "additional" platforms. He commented that the cost of high-latitude support vessels was supposed to have been part of the regular cost of the program, but this money must have been used for other things, since funds have been earmarked from OPCOM for this purpose. Francis responded that this was because SOEs had been used for essential engineering development instead.

Austin stated that if the funding increment is a step function, it is not clear that OPCOM-type discussion will be needed for the second year. Malfait noted that the idea is not to fritter away the money on extra personnel, etc. It should be used to assist in the achievement of LRP objectives. Austin asked whether OPCOM should meet again, or whether its modified recommendations should be forwarded to JOI, Inc. Mutter suggested that, if OPCOM were to meet again, suggestions be solicited from a wider community. However, Natland felt that ODP does get such suggestions and that it would not be useful to solicit them. Austin said that timing was also a problem: he would prefer to get the money sooner, rather than later, and the "meter starts running" on October 1. Responding to another question from Mutter, Austin said

that panels had had the opportunity to discuss the funding increment, by mail or at meetings, and forward their opinions to OPCOM. Pyle added that the funding increment was aimed at the LRP and that necessarily narrowed the options for its use. Austin concluded that he sensed that PCOM did not feel it necessary for OPCOM to meet again.

Pyle asked PCOM for its thoughts on whether PCOM endorsement was sufficient for the OPCOM recommendations to go to JOI, Inc. for budgeting. The endorsement should go through EXCOM, but EXCOM did not meet until January, which was late in the budgeting process. Pyle added that he would like PCOM to say that this can be dealt with by BCOM, convened by mail or fax. Cowan asked what would happen if the fluids meeting recommended spending $400,000 immediately. Austin replied that BCOM (which includes Austin) can be given the power to make limited modifications. If $1M is requested, the decision might have to come back to PCOM. PCOM passed the following motion.

PCOM Motion

PCOM endorses the plan for allocation of incremental funding recommended by OPCOM as modified by PCOM (see minutes for 21 August 1991). To make the funds available in a timely manner, PCOM recommends that the spending plan be passed to BCOM for their consideration prior to their scheduled meeting (i.e., early 1992).

Motion Mutter, second Duncan Vote: for 16; against 0; abstain 0; absent 1

916. Adjustments of Near-Term Program

LEG 140 (HOLE 504B/HD)

Austin stated that the plan for Leg 140 was to begin at Hole 504B and move to HD if Hole 504B cannot be cleaned within 1 week to 10 days. The status of site selection at HD was included as an attachment in the Agenda Book (white pages 201-208).

Taylor pointed out that the primary site is on the intra-rift ridge (Agenda Book, white page 205). He reported that OD-WG had felt comfortable with H. Dick's proposal. Austin noted that the issue was whether submersible data was sufficient for choice of site. Good seismic data are lacking. Austin stated that he was also comfortable with H. Dick's proposal as the basis for an initial approach to HD. He added that the minutes would reflect PCOM's endorsement.

Another issue was the time to be allowed at Hole 504B. If milling is used, it could take >10 days to clean the hole. Austin asked whether PCOM wished to endorse more freedom to the co-chiefs to decide, or whether the decision should be left to Austin , Pyle, ODP-TAMU and the co-chiefs.

Lancelot responded that he was happy to have that sub-group decide, so long as it was realized that there was nothing magical about the 10-day limit. If the hole can be cleaned without milling, it might be completed within 2-3 days. After that, it might be best to go straight to milling. Austin informed PCOM that Leg 140 provided 39 days of on-site time at Hole 504B. A transit to HD would take 4.5 days and the trip from HD to Panama would take 6 days. Too long a delay before going to HD leads to a situation of diminishing returns. Francis added that if milling is begun, but does not work, little time will remain for HD. Natland commented that

H. Dick has the minimum time requirements worked out and is aware of the cut-offs. Austin reminded PCOM that there were contingencies associated with Leg 137 and these can be left in place. However, PCOM should be aware that milling is a new variable. Lancelot stressed that the decision-making group must be informed of progress early, and not just after 10 days.

LEG 141 (CTJ)

Austin stated that GEOPROPS would not now be on the drill ship for Leg 141. He asked whether the planned test of the MDCB should, therefore, still be conducted, noting that Leg 141 is short of time for its stated objectives. Austin added that the MDCB might have a lower engineering priority now that GEOPROPS is unavailable.

Lancelot asked Francis whether the ODP-TAMU engineers will wish to test the MDCB later, if not on Leg 141. Francis replied that the philosophy is that if MDCB does not work, there will be no further spending on it. However, it does need a test. Austin reminded PCOM that GEOPROPS was the primary rationale for the MDCB. Francis pointed out that the MDCB test would only take a few hours and, furthermore, that D. Huey would be on Leg 141; he has been the ODP-TAMU engineer behind MDCB. There was general agreement that the test of the MDCB on Leg 141 should take place as planned.

LEGS 143 AND 144 (A&G)

Austin reported that ODP-TAMU has approached the co-chiefs to test the shallow-water capability of *JOIDES Resolution* with a site or sites. Francis explained that the proposed test was part of the attempt to maximize the capabilities of *JOIDES Resolution.* SEDCO has tested the sister ship of *JOIDES Resolution (472)* in 57 ft (17 m) of water in the R. Tagus at Lisbon. DP was used with a taut wire. SEDCO feels that, with good sea conditions, the vessels can drill in very shallow water (<<60 m). The shallowest water in which *JOIDES Resolution* has drilled to date has been 150 m. ODP-TAMU felt that a test would be useful. This would be an engineering test, involving only rotary drilling (the APC cannot be used in shallow water). ODP-TAMU had written to the co-chiefs asking them to suggest an atoll. They were keen about the test, since it opens up prospects for atoll drilling in the future, and suggested Enewetak. The test will require about 30 hrs. on site, plus a transit time of about 2.5 days. Enewetak is a big atoll and was the site of 43 nuclear explosions between 1948 and 1958. It has been covered extensively by geophysical surveys. ODP-TAMU staff scientists on legs 143 and 144 will pick the site and it will go to PPSP in October. The water depth will be ~20 m.

Malfait asked whether the Nuclear Regulatory Commission had drilled on Enewetak. Francis answered that they had, and had studied Enewetak in great detail. Austin commented that it would be useful to tie the proposed ODP-TAMU drilling into the existing drill data, referring to a recently-published USGS Memoir by B. Wardlaw. Francis noted that the proposed Enewetak site was the only true atoll site in the legs 143 and 144 "atolls" and guyots program.

Austin asked whether Francis was certain of unanimous co-chief support for the test and asked how it would be incorporated into the legs' prospectus. Francis answered that he was sure of co-chief support; the test could take place on either Leg 143 or Leg 144. Austin noted that this was a substantial deviation from the Program Plan and would require a motion. Taylor asked how it would affect thematic panel objectives. Watkins noted that A&G-DPG had regretted that the drillship could not drill on atolls; there was unanimous enthusiasm for this sort of thing. He asked how deep a hole could be drilled in 30 hrs. Francis replied ~200 m. Swart cautioned that

a great deal of sand might be encountered. Francis replied that if this test of the DP system in shallow water was successful, a return could be made with DCS in the future. PCOM passed the following motion.

PCOM Motion

PCOM endorses the concept of drilling one rotary core site in the lagoon at Enewetak Atoll for the purpose of testing the drilling capability of *JOIDES Resolution* in shallow water. The duration of this test, including deviation from the proposed (legs 143/144) track, should not exceed 60 hours.

Motion Swart, second Cita-Sironi Vote: for 16; against 0; abstain 0; absent 1

Austin reminded PCOM of the plan to include logging of Hole 801C (S-2) as an alternate. It could impact Leg 144 (Appendix 12). Golovchenko felt that if it was left as an alternate, it would not get done. However, Austin stated that after the earlier discussion about S-proposals it could only be an alternate. Cita-Sironi said that it should not be ignored. PCOM passed the following motion.

PCOM Motion

PCOM moves that supplemental science proposal S-2 (to log Hole 801C) be incorporated in the prospectus of legs 143/144 (Atolls and Guyots) as an alternate site, and that the appointed co-chief scientists consider logging at Hole 801C, which has a considerable scientific merit as recognized by the thematic panels and by PCOM, if time is available.

Motion Cita-Sironi, second Natland Vote: for 16; against 0; abstain 0; absent 1

LEG 145 (NPT)

Austin stated that Leg 145 had already been discussed at length and the appropriate action taken. There was no need for further discussion at this stage.

LEG 146 (CA)

Austin explained that the GEOPROPS issue had bearing on Leg 146. Furthermore, his perspective was that Leg 146 got onto the schedule primarily as a fluids program, but that limited fluid sampling capability was now available. Taylor asked if that meant that options for Leg 146 were limited to those available at Nankai. Francis replied that that was so, except in the unlikely event that GEOPROPS was ready. Taylor asked about the status of LAST. Austin replied that LAST was not ready. It was back with the manufacturer. He added that PCOM would be discussing third-party tool development later in the meeting.

Golovchenko recalled that LAST I had worked on Nankai, but Francis said that LAST II had not yet been made available. Taylor noted that K. Moran had produced a tool (LAST I) that worked. Natland asked what might be expected from CA. Cowan replied that there were 2 parts to CA. The first is the Vancouver Island diffuse porosity and hydrates study, which only needs squeezed water. The second part is the main fluids element. The only possibility will be to use a drill string packer, probably in perforated-cased holes. Francis reminded PCOM that

the PCS is working. However, Cowan agreed that in the sense that CA had wanted the capability to isolate parts of the hole near faults, the situation was the same as at Nankai.

Austin said that PCOM must be realistic about what Leg 146 can accomplish, though he was not suggesting removing it from the schedule. Von Rad suggested contacting SGPP and the co-chiefs: perhaps they could push the development of GEOPROPS. Austin pointed out that development of GEOPROPS had been guided by someone who no longer feels his science is being served by further effort on GEOPROPS. In response to a question from Duncan, Cowan said that he had asked C. Moore whether Leg 146 would be worthwhile if GEOPROPS was unavailable. Moore had suggested the drill-string packer, but that will not help isolate sections of hole.

Austin stated that, though the existing third-party developer will not work further on GEOPROPS, it could be ready for Leg 146 if PCOM makes a recommendation, e.g., to turn it over to ODP-TAMU. However, he added, PCOM had made GEOPROPS and the MDCB the lowest ODP-TAMU priority in April, 1991. Duncan asked how close to completion GEOPROPS was. Francis replied that it had been tested at the end of June by TAM in Houston. It was felt to be not yet ready for sea, and will need a sea test prior to CA.

Taylor said that, as far as CA was concerned: 1) availability of GEOPROPS is a primary issue, 2) the leg should continue even without GEOPROPS, 3) the issue of how to develop GEOPROPS should be left until the agenda item on third-party tools. Austin asked whether PCOM should modify Leg 146 because GEOPROPS is not available, or tell ODP-TAMU to make GEOPROPS available. Francis noted that, even if an ODP-TAMU engineer can be found to get GEOPROPS ready, PCOM should not expect too much of the tool on Leg 146. Mutter asked what it would take to get GEOPROPS ready for Leg 146. Francis replied that it would require an engineer and ~$25,000. S. McGrath, a new ODP-TAMU engineer, might be appropriate, though he could not do much work on GEOPROPS until January, since he is going on Leg 141. Furthermore, this would mean setting aside the engineering priority list endorsed by PCOM in April. Austin noted that that priority list (Agenda Book, white page 37) does show MDCB required for GEOPROPS on Leg 146. He added that having GEOPROPS become ODP-TAMU's responsibility sets a precedent that might encourage other third parties to drop tools for ODP-TAMU to pick up. Perhaps it would be best to wait for recommendations of the fluid sampling meeting chaired by P. Worthington. Taylor asked whether this would indeed be a precedent, noting that some of K. Becker's equipment had been incorporated into ODP-TAMU. However, Austin explained that once a tool becomes deployable on the drill ship, it goes to ODP-TAMU anyway.

Cowan stated that CA needs a fluids sampler and asked what could be done to guarantee that the tool will be workable and on the drill ship in only 1 year. Austin remarked that he was concerned about admitting now that GEOPROPS will not be available. Fluid sampling is important. Cowan said that PCOM should then wait for Worthington's fluid sampling meeting to report. Natland pointed out that deployment for Leg 146 requires immediate action, but if GEOPROPS is intended as a long-term tool, designed with more than Leg 146 in mind, it should not be abandoned, even if it cannot be made ready for Leg 146. Austin commented that he did not think that deployment of GEOPROPS on Leg 146 was impossible. Francis said that MDCB and GEOPROPS would have to be tested before Leg 146. That test would have to be on Leg 144. Responding to probing from Austin, Francis admitted that it would be possible. Austin felt that such developments must be scheduled and pushed, or they would never happen. Sediment squeezing might always be the only way to sample fluids.

Duncan suggested that a co-chief replace the GEOPROPS third-party developer to interact with ODP-TAMU. Austin pointed out that the previous third-party developer had not wanted to write another proposal for funding. Natland asked what might be possible sources of $25,000 in the short term. He suggested OPCOM or USSAC funds. Pyle replied that the OPCOM funds would not be available and that USSAC is a US program, while GEOPROPS is an international tool. Austin noted that even if a co-chief could be persuaded to write a proposal for more funds, it would not solve the problem of making the engineering personnel available. Natland stated that GEOPROPS had been funded by US money all along and asked why USSAC was out of the question. Pyle replied that ODP-TAMU is an international organization. Austin wondered whether a US co-chief might be able to get money from USSAC. Pyle said that USSAC's response would be that this was an inappropriate use of US funds. Austin stated that OPCOM money has been committed for fluid sampling, but was not yet ready. Pyle added that OPCOM funds could not be available on October 1, because of the need for BCOM consideration. Swart felt uneasy about jeopardizing a leg for only $25,000 and asked whether ODP-TAMU could not put up the money. Austin said that would be a bad precedent.

In response to a question from Mutter, Pyle said that $25,000 was probably an underestimate of the cost of GEOPROPS. Something would have to be dropped. Austin reiterated that the OPCOM money would not be available until early 1992. Taylor asked whether, if that was the case, enough time remained for GEOPROPS to be developed. Swart pointed out that even if a proposal was written today, no funds could be received before January. Pyle stated that ODP was in the red and that he would not mortgage it further. Austin explained that JOI, Inc. could spend the money, but that it might not get it back. In that eventuality, PCOM would have to tell JOI, Inc. where something could be dropped. Malfait said that re-budgeting the Program Plan was an option.

Cowan suggested leaving the matter to BCOM, pending the report of the fluid sampling meeting, since it must be determined whether the investment is worthwhile. Austin reminded PCOM that, even if the money was available, an engineer and a proponent to interact with ODP-TAMU (perhaps a co-chief) would be required. Natland suggested not making CA Leg 146. Austin responded that PCOM was not in that position. The question is what to do now. Austin said that CA might have to be made the GEOPROPS test leg. Watkins agreed with Cowan. He asked what could be done, in light of the Gas Hydrates workshop, to find out more about hydrates on CA. Perhaps the emphasis could be shifted to make Leg 146 a hydrates leg. He also suggested that deployment of Corks might be useful.

Austin cautioned that the fluid sampling committee might not be specific on the issue of GEOPROPS. PCOM must reaffirm the importance of GEOPROPS and its preparedness to allocate OPCOM money as soon as it is available. Taylor suggested using $50,000 out of the current budget for the DCS in October, and Mutter suggested sending GEOPROPS on Leg 141. Francis responded that these ideas will not work. Money was not the only consideration. An engineer is needed.

Austin referred to the guidelines on the development of third-party tools, published in the February, 1991, issue of the *JOIDES Journal*. The guidelines state that tools must pass land tests and be endorsed by PCOM. If GEOPROPS were given to ODP-TAMU now, PCOM would be breaching those guidelines. Pyle pointed out that the prevailing cost estimates and engineering time are just to get to a land test. A sea test will then be required, during which problems will probably be identified and more money required. Austin countered that to drop GEOPROPS would be to abandon fluid sampling. Natland asked whether, if the bench test had worked and GEOPROPS had gone on Leg 141 and failed, there would have been no money to fix it. If such money were available, why is it unavailable now? Malfait remarked that

GEOPROPS was supposed to have been ready for Nankai; its funding had already been supplemented twice.

Lancelot asked for clarification of the issue of third-party tools. Austin responded that the endorsed guidelines for development of third-party tools have loopholes linked to the principal investigator. Lancelot asked whether PCOM could decide that a third-party tool is so important that it should be made an ODP tool. Austin responded that the objection was that GEOPROPS was not a working tool.

Jenkyns read a preliminary motion regarding GEOPROPS. Swart suggested mentioning the OPCOM money, when it becomes available, to enable testing on Leg 146. Taylor pointed out that GEOPROPS is a physical properties tool that also collects fluids. The engineering prioritization was made on the assumption that it was a third-party tool and it, therefore, was not even included in the prioritization. If PCOM wants ODP-TAMU to develop GEOPROPS, it should be slotted into the engineering prioritization. Austin responded that he would rather not change the prioritization, especially before the report of the fluid sampling meeting. Mutter asked what would happen if the co-chiefs demand a working tool, rather than a test tool. Cowan responded that he thought that the co-chiefs would say that the leg was worthwhile whether GEOPROPS is available or not. Mutter said that perhaps PCOM should overrule that philosophy. Austin felt that the fluids thrust of Leg 146 could be de-emphasized. Swart asked whether there would be a GEOPROPS expert at the fluid sampling meeting; Francis replied that D. Huey would be present. Swart said that he would also be there. PCOM passed the following motion.

PCOM Motion

PCOM reaffirms the critical importance of the development of GEOPROPS, or tool of comparable capability, as an integral part of scientific planning. PCOM further recommends that OPCOM funds be made available as soon as practicable to further this aim. PCOM anticipates that a suitable tool could be tested on Leg 146.

Motion Jenkyns, second Natland — Vote: for 13; against 1; abstain 2; absent 1

LEG 147 (ENGINEERING EPR/HD)

Austin proposed deferring discussion until the outcome of Leg 140 is known.

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Austin pointed out that J. Fox, InterRIDGE liaison, would be unable to attend the meeting because of the effects of Hurricane Bob on the east coast of the US. There would, therefore, be no co-chair report.

917. Old Business

FOCUSSING ODP

Austin explained that EXCOM was concerned about the potential for focussing ODP beyond the LRP. STRATCOM was a renewal-driven initiative (see executive summaries of STRATCOM I and II, Agenda Book, white pages 187-189). Austin stated that he would like PCOM to reexamine the STRATCOM recommendations and to look specifically at the issue of focussing. EXCOM feels that PCOM is the group to focus ODP if it is felt to be necessary. Austin felt that discussion of this issue would also give PCOM members an opportunity to highlight what they think is scientifically important. PCOM may conclude, as it did a year ago, that ODP is working well and that the LRP is an adequate implementation document.

Cowan saw no need to focus ODP because: 1) it was no longer necessary for renewal, and 2) it is unclear at which audience a focussed plan would be aimed. Austin recalled that the PCOM's fear last year had been that focussing would cut out some groups and not reach new ones. Austin said that 12 of the 16 themes of the LRP are now being addressed, but that EXCOM thinks that ODP is not focussed enough.

Lancelot agreed. There is a perception that ODP is an old program. Lancelot has had to defend it in competition with other programs by arguing that ODP, and the LRP, are new. Global change programs place big problems first, followed by strategy. ODP does not. The idea of a proposal-driven program sounds good to PCOM, but others do not understand it. Lancelot reported that he has heard this from several committees. ODP should define some major problems, then define strategy. Duncan agreed with Lancelot. PCOM can provide a balance between the ideas that percolate up through the system and long-term goals. However, he felt that WGs and DPGs have been successful in focussing ODP and that there was no need to go further.

Natland noted that PCOM was no longer trying to sell ODP. His concern was that ODP is facing major programs that will take much time. Some concentration of effort will be necessary. There are too many things to do and not enough time. DSDP/ODP have had a history of concentration. Ocean history was the early emphasis: there was no crustal drilling. Ocean history is also an emphasis now, but the lithosphere community now wants to embark on some major initiatives.

Cita-Sironi pointed out that she represented 12 countries who are working together, not fighting, toward renewal. Nobody wants to drop out and there is no need to focus for renewal. Speaking as a stratigrapher, she said that there are still gaps in the record, e.g., early-middle Miocene and Oligocene/Miocene boundary. More biostratigraphy and magnetostratigraphy are needed. The stratigraphy community is large.

Mutter felt that the issue of focussing arises because of comparisons with other programs, e.g., RIDGE and WOCE. They use many tools to address a single problem. In contrast, ODP champions a single tool for many problems. At the same time, a subset of the LRP objectives could be defined that includes problems that can only be solved by drilling. These could be addressed as central themes, while not ignoring others. Austin noted that STRATCOM had come up with 6 themes, reduced from 16, for which it was felt that drilling was critical. Mutter said that ODP's goals read as knowledge-gathering exercises, adding that other programs have clearer objectives.

Crawford pointed out that Canada and Australia are in similar situations. Most geologists in those countries are land-based explorationists. ODP needs their goodwill, or Canadian/Australian renewal would be jeopardized. The drilling of 90 m of massive sulfides on Leg 139 just before the Canadian port call has been particularly important and the flow of information to continental geologists must be maintained. Renewal is now fairly certain and there is no need to focus ODP further as a renewal strategy. However, perhaps ODP should focus on problems that can only be addressed by drilling, as suggested by Mutter.

Austin agreed that ODP has been tool-limited. A 5-year renewal was now reasonably sure, but ODP was entering a period when multiple tools will be considered. It might not be too early to try to get away from the tool-limited philosophy. Taylor felt that alternate platforms will require focussing on problems only they can address. He was strongly in favor of a bottom-up, proposal-driven ODP, as was his institution. Leg 138 was a classic example of a small group of scientists writing a competitive proposal and carrying through a leg. However, in 1998, with alternate platforms arriving on the scene, he might have to argue differently.

Tamaki felt that DSDP had had clear strategies and had succeeded well. It had been a top-down program and ODP has similar obligations. He preferred a top-down organization. Austin asked what the response to the LRP had been in Japan. Tamaki replied that Japan was happy with the LRP; it had been discussed by a small committee. Responding to a further question from Austin, Tamaki said that he saw PCOM as the "top" for a "top-down" ODP.

Curry said that while, in one sense, the LRP is a document oriented toward a bottom-up ODP, it also fits a long-term Neogene focus. The 2 sides are inseparable. The best proposals in each theme always rise to the top. Lancelot commented that proponents view their task as writing proposals to use the facility. They might have thematic objectives in mind, but they are not the main point. Lancelot liked the idea of having the main problems clearly in mind. ODP is viewed as the facility: *JOIDES Resolution.*

Jenkyns noted that PCOM had stated that thematic panels can write proposals, so that there is a mechanism for top-down direction. Austin asked for the British perspective. Jenkyns answered that focussing was no longer relevant to renewal and that most people are happy. Jenkyns asked to whom PCOM was responding: 1 or 2 EXCOM members, or a broader community? However, he added that the situation post-1998 would be different. Austin commented that it was a question of how forward-thinking PCOM wanted to be.

Von Rad reported that the LRP had been discussed a great deal in Germany. There was no desire to exclude groups by focussing. In general, Germany was happy with a proposal-driven ODP. However, there are exceptions. For instance, von Rad approved of NARM-DPG's identification of gaps. He also felt that OHP should have submitted the Santa Barbara Basin supplemental science proposal, which they initiated.

Francis commented that the very nature of ocean drilling is "top down". This introduces a bias, to which ODP adds by drilling lots of shallow holes. To change this, *JOIDES Resolution* must be allowed to spend more time on site. Curry noted that the funds available for research follow a similar trend, with most for the Pleistocene. He did not think that that was just because the Pleistocene was easier to recover. ODP would be wasting its time if it collected large amounts of older material if there were no US funds available to work on it.

Sharaskin, noting that ODP depends on proposals at present, said that it makes sense to encourage people to write proposals on subjects PCOM considers important. It would also be useful to integrate not only the panels' ideas, but also those of the national groups.

Austin reminded PCOM that brochures had now been prepared by Australia, Germany, UK and the US. Their emphases should be compared. Pyle responded that that had been done to some extent and that it had been fed into the LRP. Von Rad stated that a growing community in Germany was interested in the Mesozoic, which was missing from the 6 STRATCOM themes. Watkins felt that, since the LRP had only been out for 1 year, it was too soon to worry about it and that problems would become more evident later.

Natland said that the main point is how to allocate time. Many of the oceanic lithosphere community's plans are unrealistic, but even a realistic program will require the dedication of more time. That is a top-down decision. Watkins commented that all interest groups feel that they are not getting enough time. Mutter felt that the job of PCOM was to sit above that and plan. The LRP is not seen as a plan, but as a menu from which a plan can be drawn. PCOM has yet to construct a plan. Austin agreed that was PCOM's job. However, Taylor thought it would be bad to disenfranchise a large section of the community. The Ocean Margin Drilling program had done that and it was one reason why it did not develop. He did not want "little science" to be "squeezed out". Austin countered that the Ocean Margin Drilling Program did not fail to materialize because it did not cover all communities. Focussing did not mean closing out ideas. HD was a good example of a good idea that rose rapidly through the system. Taylor said that a proposal to study the K/T impact event would also be a good example: it would not be covered by any of the existing themes. Austin stressed that the whole JOIDES structure, including PCOM, must continue to remind itself that the thematic thrust is important. No more formal action may be required at this stage than to remind ourselves.

Cowan suggested that there were 2 kinds of focussing: 1) focussing the 16 LRP themes to 6, and 2) focussing on problems that can only be addressed by the drill ship. Cowan was in favor of the latter. However, he noted, ODP was still developing a lot of the technology required for these problems, e.g., DCS and fluid sampling. Austin asked whether PCOM needed to push harder on these technological developments. PCOM has expressed the desire to address certain problems and has scheduled legs under the assumption that the technology will be ready. However, it has occasionally not been ready. Then ODP faces criticism that results would have been better if legs had been done properly. Cowan said that, therefore, PCOM should direct ODP's resources to those specific items, as OPCOM did.

Austin asked whether it was enough for PCOM to be internally cognizant of this, or whether it was important for PCOM to be more outwardly directive. He stressed that ODP was still in competition with other initiatives. Taylor asked whether ODP should focus on the things it can do well with the drill ship, or keep butting its head against things it cannot do. Mutter stated that, as Cowan had said, drilling could have a role in fluid sampling. ODP cannot do it now, but should work toward it, since drilling was the only way. However, Taylor asked whether PCOM should be scheduling legs that require this non-existent technology. Austin responded that PCOM had had this discussion regarding DCS. The decision had been to put the spotlight on DCS and test it in an area of scientific interest (EPR). Duncan felt that it would be a mistake to concentrate on things only the drill ship can do. Integration of other problems (e.g., FDSN) was also important. However, Mutter commented that if FDSN wants seismometers in holes, the only way to do that is by drilling.

Natland recalled that in 1977, PCOM had decided that, because of many legs to drill oceanic crust and accretionary margins, there would be a change of emphasis to ocean history. It was a top-down decision to exploit the HPC, a new tool. Curry agreed that it had been a top-down decision, but added that it was also a revolutionary time for paleoceanographers, who could now penetrate below the top few m. Proposals came in to use the new tool. Taylor added that if ODP demonstrates that it can do something, there will be a drive to do more of it. Tamaki stated that the bottom-up philosophy had not produced any outstanding results for the Japanese community over the last 20 years.

Austin said that it might be useful to determine which of the LRP's 16 themes are uniquely attached to drilling. He asked whether PCOM was comfortable with the way it handles input. He added that focussing is more of a US issue at EXCOM than an international one. Taylor responded that PCOM members "vote with their feet" when scheduling legs and budgeting for engineering developments. Mutter countered that that was not planning, or at least not long-term planning. It's reacting. Taylor responded that the introduction of engineering legs was a long-range development.

Austin asked whether PCOM had a perception of how panel input and ranking will lead to generation of the FY93 schedule. Natland replied that the present approach was consensus-based. He asked whether PCOM could move from that. Cowan did not think that a change would be possible while ODP was still in the DSDP mode of 2-month legs. Until the DCS is operational and a new battery of tools (e.g., fluid samplers) is available, PCOM will not be able to focus on what ODP can do well. Lancelot agreed with Natland. In the early days, panels laid out major problems and then suggested where the drill ship should go to solve them. Then they fought at PCOM for ship time. OHP still does that, but the others do not: their objectives come from PCOM. In most cases, PCOM selects the best science, but it would be nice to have a program focussed on what ODP can do uniquely. Austin reminded PCOM that it should look at the LRP and determine where ODP can make the greatest contributions. Lancelot agreed.

Taylor felt that PCOM needed input. Panels should consider the LRP points in detail and pull out what they think should be done globally about specific problems. Austin pointed out that panel white papers exist; they are viewed by panels equally with the LRP. Mutter stated that white papers were not implementation plans. Austin said that perhaps PCOM should give more guidance to panels. Von Rad noted that SGPP has its main interests, accretionary wedges and sedimented ridges, and that these are now being addressed. Natland felt that white papers, etc., were productive to a point, but the available range of proposals does not address some problems. For example, LITHP will not discuss problems for which no proposal exists, in spite of PCOM's direction.

Austin noted that thematic panels had always wanted to review proposals. However, proposal review takes a lot of time and, now that DPG's exist, panels are passing proposals to them. This was predicted when regional panels disbanded. If thematic panels do not have the right membership, or are incapable of handling their tasks, PCOM must examine that situation. Taylor felt that PCOM could only plan if it gets advice. He reiterated his suggestion that the panels review each LRP point. Austin responded that he could tell the panels to re-evaluate the LRP, but if PCOM does not know what it thinks is important, it will not be able to judge the panels' advice.

Lancelot commented that panels do not take a leadership role. He suggested that they be charged with constructing a detailed scientific framework. Austin reiterated that PCOM must know what it wants or it cannot complain if panel rankings are flawed.

Cowan recalled the Hawaii Annual Meeting. He asked what PCOM's options were. CA could have been thrown out because it could not be done properly, but what would have replaced it? Until the technology is ready PCOM has no choice. Austin responded that Sedimented Ridges II had been dropped because of safety concerns, but he felt that PCOM's response had been inconsistent. Later in this meeting, programs to be included in the FY93 prospectus will be decided. The FY93 program will be produced from that. PCOM should think about what it wants to do in order that the North Atlantic program will be a success. Taylor felt that a longer view of the North Atlantic program than 1 year was needed. Blum noted that no program wanted more than 2 legs in a row, and only NARM-DPG wanted 2. Austin thought that might have been a reaction to what NARM-DPG thought that PCOM would do. However, Blum pointed out that NARM-DPG clearly stated that they want a year in between pairs of NARM legs.

Returning to the process of setting the ship's schedule, Austin reminded PCOM that panel chairs attended the Hawaii Annual Meeting. Lancelot had been the watchdog for NPT and had been lukewarm. Then the OHP chair had made the case that OHP must have NPT. Austin remarked that he was not saying that the North Pacific was a bad place to work, but that the issue was that the OHP chair had made a demand and PCOM was not prepared to have a point of view, even though most PCOM members thought the proposal weak. He asked PCOM whether it wanted to be liked or to be effective.

Austin sensed a range of opinions within PCOM: some are happy with the *status quo*, others feel that things could be done differently. Austin said that he would re-emphasize the motion that PCOM passed last year in his charge to the thematic panels. He felt that it was important to stress that panels be proactive, look critically at the LRP and dovetail it with their own interests. PCOM must then come to the Annual Meeting with a vision of what it wants to get out of the process. PCOM must be more proactive. If PCOM is too chaotic in its response at the Annual Meeting, perhaps it should write its own white paper.

918. Membership and Personnel Actions.

Austin stressed the need to examine critical disciplinary gaps in panel membership. He noted that there were not many nominations to make at present, but that there might be many more at the Annual Meeting.

LITHP

S. Bloomer has been invited to replace M. Perfit. S. Humphris will provide >1 nominee in future, but will not approach all of them in advance. PCOM had suggested that LITHP augment its tectonics expertise. It will meet jointly with TECP in October and enhanced cross-over of expertise will be considered.

OHP

N. Shackleton will retire as chairperson after the Annual Meeting. M. Delaney will probably replace him as chair and may attend the Annual Meeting as a guest. Austin noted that she had been very effective at OPCOM.

Duncan noted that Delaney's rotation date was 1992, but Austin explained that she would automatically get another 3 years if she becomes chairperson. Natland pointed out that the USSR representative was wrong for OHP. Sharaskin agreed and said that he would look into the matter.

SGPP

J. McKenzie has replaced E. Suess as chairperson and Suess will leave SGPP after the November meeting, as will S. Dreiss. Their departure will leave a gap in SGPP's fluid expertise. McKenzie has also stated that metallogenesis and paleochemistry are underrepresented on SGPP. (SGPP list their themes as: sea level, sediments, fluids, metallogenesis and paleochemistry.) McKenzie wishes to be an "at-large" chair, as was Suess. This would require ESF to appoint a new member.

Cita-Sironi said that the nominee proposed by SGPP was M. Camerlenghi. He would attend as a guest at the November meeting. Austin noted that PCOM should receive multiple nominees and that Camerlenghi must be only a guest in November, since panel members rotate in January. In response to a question from Pyle, Austin said that at-large members are created to achieve disciplinary balance. Taylor observed that, in that case, the at-large member should be the one being brought in for additional expertise, and not the panel chair. Austin responded that McKenzie did not mind being ESF representative and Camerlenghi could be the at-large member. It is a question of financial support. McKenzie had planned to be paid from a separate source, but if Camerlenghi became the at-large member, ESF would have to pay for both. Cita-Sironi said that was an ESF problem.

Austin asked whether PCOM should request multiple nominees. Alternatively, PCOM could make nominations. However, he added, such options would only be possible if McKenzie remains ESF representative. If McKenzie is made at-large, the other nominee would be an ESF representative and decided upon only by ESF. Cowan stated that McKenzie was the ESF representative. Austin replied that he could ask McKenzie to provide additional nominations. Duncan proposed G. Klinkhammer, whose expertise is in fluids and spreading ridges. Austin asked Duncan to obtain a CV for discussion at the Annual Meeting. Taylor noted that the CV should also go to McKenzie.

Austin pointed out that at least one replacement for Suess and Dreiss will be needed. Of SGPP's 5 themes, 3 are underrepresented. PCOM should nominate for at least 1 of the fluids vacancies, if not today then before the SGPP November meeting. Austin added that Camerlenghi will not attend as a guest in November. PCOM reached the following consensus.

PCOM Consensus

PCOM thanks Erwin Suess, who is leaving the chairmanship of the youngest thematic panel of ODP (SGPP), for his dynamic, intelligent and dedicated leadership.

TECP

Austin reported that no action is required. Mutter highlighted the lack of knowledge of extensional tectonics on the panel. He said that there were 4 individuals with such expertise, but felt that most had strong regional biases and only one had a broader view. If a replacement is needed after the next meeting, someone with broad expertise re: extension should be nominated. Austin stated that nominees would be needed. PCOM should review TECP's membership, considering white papers and the LRP, and bring to the Annual Meeting ideas on completing its expertise. Lancelot noted that the French representative, J. Bourgois (who has compressional expertise) would be rotating off. He could be replaced by, e.g., J.-C. Sibuet, who has the expertise Mutter thinks is necessary. Jenkyns pointed out that G. Westbrook had already been replaced by A. Robinson. Austin reminded PCOM that nominees would be needed in the next few weeks, before the panel meetings.

Natland commented that TECP has had a series of interactions with LITHP. TECP feels that many proposals with LITHP objectives do not address tectonics. One problem is the lack of tectonic expertise on LITHP. Another is that only one person on TECP has mid-ocean ridge experience. Austin expressed reservations about setting up sub-groups of influence. He was sympathetic to joint panel meetings, adding that panels can always nominate guests with specific expertise. Austin said that he could ask Moores (TECP chair) to evaluate TECP's membership in relation to its themes (as McKenzie had done for SGPP). Natland said that TECP seems to think that tectonic themes will come out of LITHP proposals, which is one reason that TECP ranks lithosphere proposals poorly. Austin felt that PCOM had to continue to give panels the opportunity to fix problems on their own. Mutter asked what PCOM's role was. Austin reiterated that PCOM should ask Moores to consider TECP's expertise in light of its themes. Then PCOM can impose its views: it has already pointed out the gap in lithosphere knowledge and, therefore, supported joint meetings with LITHP.

DMP

B. Carson has rotated off. The two nominees, R. Desbrandes and S. Hickman, are both willing to serve. Worthington has recommended nominating Desbrandes and "saving" Hickman until 1992.

Taylor observed that rotation dates had passed for some panel members. Austin responded that the rotation policy is less formal for service panels. Golovchenko added that Wilkins had asked to stay on DMP (he is one of the few who have sailed on a leg), but will rotate off after January. Karig will rotate off after October.

IHP

No action required. Moore has been replaced as chairperson by Gibson. Austin commented that IHP will have to deal with PEC III comments on publications. Sharaskin said that he was

surprised to see Basov as the IHP nominee, as he would be better on OHP. Sharaskin said that he would discuss the matter with Bogdanov.

PPSP

No action required.

SMP

R. Chaney has been invited to replace Gibson. Since Gibson was the C-A representative, the JOIDES Office had waited for a C-A nominee. None was received, so Chaney was invited.

SSP

No action required. SSP will review its own membership in October.

Von Rad informed PCOM that K. Hinz is the new German representative, replacing H. Meyer. Mutter noted that Hinz will provide expertise on passive margins.

TEDCOM

No new ESF nominee to replace Strand has been received. Sparks would like S. Thorhallsson to join TEDCOM. Thorhallsson has been invited and will join. Austin will be at the September TEDCOM meeting, as will H. Zaremba.

NARM-DPG

NARM-DPG has had its second and presumably final meeting. Its report should be ready in September. There were some membership changes at the second meeting. NARM-DPG co-chairperson Larsen will present the report to PCOM at the Annual Meeting.

In response to a question from Mutter, Austin said that NARM-DPG will not be disbanded until the report has been reviewed. NARM-DPG could be asked to meet again. Responding to a question form Cita-Sironi, Austin said that the NARM-DPG report will be part of the North Atlantic Prospectus. Von Rad commented that new NARM proposals might be received. Austin agreed that this might happen. Such proposals would be forwarded for panel review and PCOM would have to discuss how to dovetail them with the NARM-DPG report.

OD-WG

OD-WG has met once and will meet twice more in the next year. In response to a question from Taylor on the relatively poor attendance at the first meeting, Austin explained that August is a period of many schedule conflicts. He predicted that more will attend the next meeting. Taylor felt that there was a need to clarify the membership of OD-WG, since the chairperson was not even sure. Austin said that he would take note. OD-WG membership could be augmented, if necessary.

SL-WG

SL-WG has met once and will meet again in November. There will probably be a third meeting in the spring of 1992. SL-WG would like to invite 3 speakers to its November meeting. In response to a question from Jenkyns, Austin said that one of the potential invited speakers was non-US.

LIAISONS

Cowan pointed out that the Annual Meeting would be his last PCOM meeting. He cannot attend the next DMP meeting because of a conflict and expected Becker to attend. Austin responded that the JOIDES Office would contact Becker.

Neither Lancelot nor Watkins could attend SSP in October. Austin said that he would ask Taira to attend. Tucholke could attend the LITHP/TECP joint meeting in Cyprus instead of Taira.

Taylor pointed out that OD-WG would meet twice in the spring and that he preferred not to be SGPP liaison. Von Rad said that SGPP will meet in Miami in February or March, 1992. Cita-Sironi noted that she had no expertise for her role as SMP liaison and offered to go to the spring SGPP meeting.

Austin stated that he would attend TEDCOM's next meeting, in place of Natland.

PANCHM

S. Humphris was nominated as chairperson of PANCHM, with J. McKenzie as backup nominee.

CO-CHIEFS

All co-chiefs for legs through Leg 146 have accepted their appointments. Austin suggested deferring nominations for Leg 147 until it is clear what Leg 147 will be.

PCOM passed the following motion.

PCOM Motion

PCOM endorses all personnel actions taken at the August meeting.
Motion Watkins, second Cowan Vote: for 16; against 0; abstain 0; absent 1

919. New Business

FORMAT OF THE FY93 "NORTH ATLANTIC PROSPECTUS"

Curry noted that he was a proponent. Austin thanked him for the notification, but did not feel that there would be any danger of conflict of interest in this case.

Atlantic programs that appear in the global rankings, down to rank 10, are listed in the Agenda Book (blue page 30). The JOIDES Office proposed that the following programs be included in the FY93 prospectus (see also Agenda Book, blue pages 29 and 31): NAAG-DPG report, NARM-DPG report, TAG hydrothermal (#361), New Jersey sea level (#348), Ceara Rise (#388), Mediterranean sapropels (#391), VICAP Gran Canaria (#380 Rev.), Alboran Basin/gateway & Mediterranean Ridge (#232 Rev. + #330) and Equatorial Atlantic transform (#346 Rev.). Proponents have been asked for revisions and most are complying. The deadline for submission of revisions is ~September 10.

Taylor pointed out that proposals globally ranked 6 and 7 by LITHP come under the purview of OD-WG. LITHP's rank 6 is Vema FZ: layer 2/3 & Vema FZ: deep crust (#376 + #382), and its rank 7 is MARK deep mantle (#369). The report of OD-WG's first meeting will be completed by September 1 and should be included in the prospectus. Natland added that he had been asked by LITHP to point out that the NARM program contained many proposals when it was ranked, but the HD, Vema and MARK proposals were ranked separately. LITHP wants to emphasize the importance of offset drilling. Mutter also felt that the Vema and MARK proposals should be included in the prospectus.

Austin pointed out that, if that was done, fairness would dictate that TECP's 6th ranked proposal, Caribbean Crust, also be included. He added that legs need to be scheduled only from January, 1993, to October, 1993. This involves only 4 legs plus an engineering leg(?). The prospectus is already very long. Taylor referred to the earlier talks on focussing ODP and noted that offset drilling was a major focus. Austin stated that he could not endorse offset drilling as a program until he received the OD-WG report. Taylor responded that a "first cut" report would be received before the deadline. Austin reported that LITHP and TECP had stated that offset drilling should not be addressed until the OD-WG report is received, but Taylor emphasized that it was an OD-WG preliminary report that he would like to see included in the prospectus. It would include revised versions of the Vema and MARK proposals. Austin asked whether the OD-WG report would constitute a drillable program. Taylor answered that it would.

Austin said that the OD-WG report would be included in the prospectus if it was received by September 10, but that individual proposals would not be included without the report. However, Curry said that PCOM could allow those proposals to be included based on the report of the OD-WG liaison. Austin agreed that if the OD-WG report was not received, both Vema FZ proposals and the MARK proposal would be included in the prospectus. Taylor said that, historically, PCOM had programs before it that would occupy >1 year when planning. Austin countered that this time the programs would occupy >2 years.

Jenkyns informed PCOM that another Alboran Basin proposal exists which will not be reviewed until after the prospectus has been produced. Austin explained that the proposal can still be ranked by thematic panels, who can review whatever they wish along with the prospectus. He noted that PCOM had included 5 LITHP items in the prospectus and asked

whether other thematic panels had been fairly treated. Mutter pointed out that no further OHP preferences would be included even if proposals to rank 10 were considered. Blum pointed out that thematic panels had previously questioned the inclusion of large numbers of proposals in the prospectus. The task then becomes almost like doing a new global ranking.

In response to a question from Natland, Austin said that TAG hydrothermal does not require DCS. Austin stressed once again the need for thematic balance in the prospectus. PCOM liaisons to thematic panels must feel that their panels are getting fair treatment. In response to a question from Taylor, Austin said that it would be up to the panels to decide whether Mediterranean sapropels was mature enough to drill. PCOM must include it in the prospectus, based upon its global ranking. Austin added that if the prospectus is too unwieldy, it might not be taken seriously.

Mutter commented that panel rankings are advice to PCOM. PCOM can choose to take whichever parts of that advice it wishes. Austin countered that PCOM would be unwise to ignore thematic input. Von Rad said that the FY93 prospectus might be useful for FY94, but Austin noted that FY94 will involve not just the North Atlantic. Von Rad expected NARM-DPG to ask for 2 legs each year (1 volcanic margin and 1 non-volcanic margin). Austin commented that if PCOM decides that the NARM-DPG report is not complete, it can send it back to NARM-DPG, or even ignore it for FY93. There are enough other programs available to fill the schedule.

Taylor asked whether the equator was the dividing line for FY93 programs. Austin replied that PCOM was on record to that effect: the line had to be drawn somewhere. The definition was made at the Paris PCOM meeting. Francis reminded PCOM that the North Atlantic weather windows will be critical and von Rad pointed out that both NARM-DPG and NAAG-DPG have requested the same planning windows.

In response to a question from Taylor, Austin said that the NARM-DPG report will be prioritized leg by leg. Taylor proposed that PCOM could create a list so that all of the panels rank the same thing. Blum pointed out that PCOM had charged NARM-DPG to consider both volcanic and non-volcanic margins, but that the report will be divided into 2 parts. Austin felt that it was up to the panels to rank as they saw fit. PCOM could not ask them to rank the NARM-DPG report as 2 parts. Taylor stressed the need for a consistent ranking: for PCOM to receive input on the same slate. Mutter thought that the NARM program might be ranked differently depending on whether the volcanic and non-volcanic parts were separate or together, e.g., LITHP might only be interested in volcanic margins.

PCOM WATCHDOGS: "NORTH ATLANTIC PROSPECTUS" PROGRAMS

Austin moved on to discuss PCOM watchdogs, noting that the idea was to avoid having proponents as watchdogs. The following assignments were made, some of which differ from, or are additional to, those in the Agenda Book (blue pages 31-32):

Alboran Basin/gateway & Mediterranean Ridge	Cowan
Equatorial Atlantic Transform	Mutter
Ceara Rise	Watkins
Mediterranean sapropels	Cita-Sironi
VICAP Gran Canaria	Malpas

OD-WG proposals (treated together)	Taylor
New Jersey sea level	Sharaskin
NAAG-DPG	Leinen
NARM-DPG	Duncan (volcanic)/ von Rad (non-volcanic)
TAG hydrothermal	Becker

Austin said that he would write a charge to the panels notifying them of what to do with the prospectus. He would fax this charge to all PCOM members for comments/input before sending it to the panels.

JOIDES Office Geriatric Study: Statute of Limitations on ODP Proposals

PCOM discussed, at its April 1991 meeting, a ~3-year limit beyond which ODP proposals would be considered inactive (without additional input from proponents). PCOM decided to wait until a list was prepared by the JOIDES Office summarizing all proposals submitted and their fates. Blum has now prepared such a list (Agenda Book, white pages 217-244; see also blue pages 32-33).

Crawford pointed out that the Marion Plateau proposal (#338) should be listed as "not drilled". It still stands as ranked by OHP. Austin noted the correction and asked PCOM members to review the list and send their comments to the JOIDES Office. He added that PEC III is also interested in this list. The main focus at this meeting is whether to institute a statute of limitations.

Blum described setting up the proposal master lists and notes (also see Agenda Book, white pages 217-244). The objective was to clarify the issue of "active" vs. "inactive" proposals. These terms have been used, but not previously defined. There are now too many proposals in the JOIDES system to review and keep in the collective memory: panel memberships change substantially every ~3 years, but ODP is now 6 years old.

The approach in developing the master lists has been to asses the status of proposals. Lists have been set up on a flexible data base system. Users of the master lists (including PCOM) are assumed to be familiar with proposal submission guidelines regarding proposal categories, proposal maturity and proposal review and ranking procedures. The JOIDES Office recommendation is to institute a statute of limitations. A possible follow-up is to adopt consistent voting procedures for ranking of submitted proposals.

A proposal is "active" in the view of the JOIDES Office if:

1) it is in review (generally done only once by the thematic panels),
2) it has been ranked (not so clearly defined, e.g., OHP globally ranked 12 proposals, while LITHP globally ranked 27 proposals),
3) it has not been ranked, but was submitted after January 1, 1988 (sometimes a thematic panel is just not interested in a proposal, sometimes it just "falls through the cracks").

The JOIDES Office would like to be able to tell panels that they have to look at this basket of proposals. Each panel would have to take ~2 dozen proposals to their meetings.

A proposal is "inactive" in the view of the JOIDES Office if:

1) it has been replaced (in the past, replacement proposals were given new numbers, but this practice has been discontinued),
2) it has been sent to a DPG (although sometimes a DPG does not include all proposals sent to it; the remainder can be re-ranked by the thematic panels),
3) it has been drilled, or is on the schedule,
4) it has not been drilled and has not been updated since January 1, 1988 (if proponents are still interested in a proposal, they should update it; the JOIDES Office will advise them when the deadline is approaching),
5) it is a "ghost" (a previous version of a resubmitted proposal when the new version was assigned a different number).

Austin interjected that renumbering of the same proposal was an artifact of the rotation of the JOIDES Office. Blum cited the example of CTJ: this proposal was first assigned #8, then #308, and finally #362. Austin noted that, using the *4th Dimension*® data base, master lists can be recast and listed by date, name, etc. Lancelot asked whether he could be sent a diskette of the list. Austin agreed to do that.

Master list A (Agenda Book, white pages 221-232) is listed by date and shows that there are no ranked proposals older than ~1988 (there are only 5 ranked proposals from 1986/7). Austin noted that this was no fluke: COSOD II met in 1987. Blum presented the JOIDES Office recommendation, couched on the form of a possible PCOM motion (Agenda Book, blue page 33).

Blum pointed out that it would only be necessary to inform 3-4 proponents in January, 1992, that their proposals were about to become inactive. In order to keep a proposal active, they could send an addendum, or perhaps only a letter, so that the JOIDES Office knows that the proposal should still be kept in the system.

Austin reiterated that only a letter might be enough to indicate continued interest on the part of the proponents and maintain the proposal on the active list. The JOIDES Office wants proponents to understand that they must continue to interact with the system. PCOM might decide to advertise, in the *JOIDES Journal*, the intent to institute this policy before formally adopting it. However, Austin would prefer to adopt it immediately.

Natland commented that if PCOM ever starts real long-range planning, a 3-4 year cut-off might knock some proposals off the list. He suggested that the thematic panels review the list so that they can contact proponents if they are interested. Austin pointed out that the panels want the statute of limitations. He asked whether PCOM agreed, philosophically, that there should be a cut-off. The panels cannot keep track of all proposals: to achieve reliable ranking a cut-off is desirable. Cowan said that he had no objections to the cut-off, but expressed the concern that the 1987 perturbation might continue: proposals might no longer become inactive after 3-4 years. Austin agreed that this was conceivable, but he would like the panels to interact with the proponents of older proposals. There must be some mechanism for tracking proposals.

Von Rad felt that there were probably some "treasures" among the old proposals that might be lost. Taylor noted that former PCOM chairperson R. Moberly had asked former thematic panel chairs to identify such "treasures". The impetus for this move was that regional panels were being phased out. No proposals were identified older than January 1, 1988. Austin added that Atlantic "treasures" have all been reworked since 1988. Natland commented that thematic panels could also look for treasures. Blum explained that the JOIDES Office would send out active proposals to thematic panels. If a panel wanted an inactive proposal, it could approach the proponents. Austin added that PCOM and the JOIDES Office are doing things differently now. The panels cannot do all that is asked of them and also review proposals back to the beginning of ODP. The panels have requested a cut-off.

Taylor suggested that an explanation of what "updated" means be included in the recommendation, to let proponents know that a rewrite is not necessarily required. However, Austin noted that there were some instances when a simple letter would be insufficient. Blum commented that in most cases there should be something to add to a proposal after 3-4 years. Curry suggested creating an option for a thematic panel to decide to keep a proposal active on its own initiative. Austin said that he could ask the thematic panels to review the lists and look for "treasures".

Natland felt that the statute of limitations was fine. If a proponent did not wish to rewrite the proposal, some sort of statement should be added, by the proponent, to the body of the proposal (i.e., the introduction) noting that this was a resubmission, even if there were no other changes. Blum pointed out that if notification that a proposal should be kept active is received from a proponent it would be necessary to re-review that proposal, since there would be nobody left on the panels who remembered the initial review. Cowan suggested changing the wording of the recommendation from "updates" to "updates or resubmissions". Natland felt that some proponents would resubmit anything. Resubmissions should include at least current site summary forms. Austin agreed that more than just a letter was required. The idea is to do what the prospectus is doing now: to make proponents improve their proposals. Blum said that the resubmission should be a revised proposal, which addresses thematic panel comments. Austin added that panel comments should be addressed, even if they were only refuted. Taylor felt that some proposals did not require even that and should be allowed to remain active at the request of thematic panels. However, Lancelot thought that proponents should be forced to resubmit: the proposal could be virtually the same as the old one and a cover letter can explain why. Von Rad agreed. He asked why a number of recent proposals in the master list (Agenda Book, white pages 231-232) had not been ranked. Blum explained that they had been reviewed. "Not ranked" indicates a lack of thematic panel interest.

Blum suggested that perhaps panels should uniformly rank their top 20 proposals. Austin commented that rankings might not mean much, based on inconsistencies revealed in the SGPP rankings. Each panel has a different method. NSF has a highly standardized ranking procedure, which is not necessarily good. Mutter felt that panels should rank according to a standard procedure. Austin asked whether use of the term "not ranked" in master lists should be continued, or whether it should be replaced by, e.g., "no interest" or "not within mandate". Watkins suggested "reviewed" instead of "not ranked".

Natland suggested allowing proposals to be kept in the list by panel request. Mutter felt that the proposals in danger were the good Atlantic proposals that do not make it onto the upcoming Atlantic schedule. However, Austin emphasized that all of the good Atlantic proposals had been updated.

Austin finally said that he wished to impose a statute of limitations on proposals. He asked whether there was any dissent. There was none. Taylor agreed to the statute of limitations as long as panels can keep a proposal active at their own discretion. Austin said that he would inform panel chairs that they can scan the lists to see it they can find any old proposals (i.e., submitted prior to January 1, 1989) that they would like to keep active. Von Rad felt that panels should be urged to do so. Austin agreed, but expected little response. Natland suggested adding a statement to the recommendation to the effect that maintaining a proposal's active status would require some minimal effort on the part of proponents. Austin responded that resubmission be per the new submission guidelines recently published in the *JOIDES Journal.* Cowan felt that a proposal that becomes inactive can only be made active if a panel requests a resubmission. He agreed with that, since it would prevent proponents automatically renewing proposals like library books. Austin said that if a panel identifies a "treasure", the chair must inform the proponents. Natland asked whether a proponent could not, therefore, resubmit on his or her own initiative. Austin and Blum replied that proponents can always resubmit at any time. It was agreed that the new statute of limitations procedure would take effect on January 1, 1992. Austin asked whether that should be in the motion. He said that it probably should be, because the October issue of the *JOIDES Journal* would publicize the new procedure and that it would take effect on January 1, 1992. Mutter asked whether the JOIDES Office kept all old proposals. Austin replied that it does, since it is the ODP archive. PCOM passed the following motion.

PCOM Motion

PCOM recommends that proposals which have not been updated for three full calendar years before the present calendar year (i.e., January 1, 1988 for 1991 activities, to roll to January 1, 1989 on January 1, 1992 for 1992 activities) be declared formally "inactive". Thematic panels will be given the directive by the JOIDES Office not to review inactive proposals formally, but rather to initiate submission of proposal updates (as per revised JOIDES Proposal Submission Guidelines, published in the June 1991 *JOIDES Journal*) from proponents if there is sufficient panel interest. The community will be informed about this change in policy through the *JOIDES Journal* (see additional documentation in the August minutes).

Motion Taylor, second Tamaki Vote: for 15; against 0; abstain 0; absent 2

In response to a question from Blum on the issue of voting procedure, Austin said that he would touch on voting procedures in his letters to the thematic panels, but that he would defer further standardization. PANCHM could discuss the issue at their meeting in December.

ODP Dependence on Third-Party Tool Development

Austin asked whether the "Guidelines for the Monitoring of Third-Party Tools" should be modified in light of the GEOPROPS situation (see correspondence in Agenda Book, white pages 211-213). Guidelines were published in the February, 1991, issue of the *JOIDES Journal* and were designed to formalize DMP's role in seeing an outside tool through from concept to deployment. Guidelines were felt appropriate by PCOM. However, the GEOPROPS principal investigator has taken development of "his" tool to a certain point and stopped. He asked whether PCOM should address this loophole.

Cowan asked whether the GEOPROPS plan included a successful test on land. Austin explained that GEOPROPS stalled in stage B of the guidelines, "at the last hurdle". Up to that point, the third party is responsible. Malfait noted that just because a person uses a tool on board *JOIDES Resolution*, it does not mean that that tool automatically goes to ODP-TAMU. Francis stated that there might be other hurdles for GEOPROPS: it lacks a manual, and possibly engineering drawings.

Natland pointed out that GEOPROPS was a particular problem because it is, and has been, an integral part of legs already scheduled, e.g., Nankai and CA. Austin commented that perhaps PCOM should be less naive and not schedule tools over which it has no control. Lancelot suggested the alternative of having ODP-TAMU take over the development of tools PCOM wishes to schedule. Austin cautioned PCOM to be aware that, if CA is to be a hydrate leg, it will be dependent on third-party development. He added that perhaps all PCOM could do was be aware of this. Lancelot felt that the matter was in the hands of DMP. However, Austin stated that DMP should know that PCOM is increasingly concerned and should point to potential snags. He noted that Golovchenko would be at the next DMP meeting. Golovchenko said that the problem is a lack of lead time. Test dates are generally so close to the legs on which tools are scheduled that if there are any problems, the tool is unavailable for its leg.

Taylor felt that PCOM needed guidelines for itself. PCOM should be more hesitant about scheduling risky tools. Austin pointed out that that would remove the pressure to develop tools and would reduce the likelihood of funding for third-party tools. Taylor thought that scheduling of testing would be sufficient to maintain pressure for development, but that such tools should not be scheduled for science until ready. Austin stated that PCOM must be realistic when it plans the FY93 schedule. Von Rad asked what he should tell SGPP about GEOPROPS. Austin replied that he would ask the co-chief, B. Carson, and also the fluid sampling meeting to consider GEOPROPS specifically.

Francis noted that principal investigators tend not to be aware of engineering problems: they are primarily interested in what the tool can do. They also tend to underestimate costs. In addition, ODP in general may be too interested in "quick fixes". Natland commented that he would not consider scheduling a third-party tool on a leg unless it had at least been tested on land. Furthermore, he would not consider the scientific objectives of that leg which required the third-party tool. Austin noted that CA would not have been scheduled under those circumstances.

CO-CHIEF ITEMS

Austin reported that EXCOM wanted PCOM to consider the issue of PCOM members serving as co-chiefs. All EXCOM wanted to know was how PCOM felt about this issue.

Lancelot said that the role of the co-chief is a matter of science and has nothing to do with conflict of interest. Cita-Sironi felt that it was a good thing if PCOM contained scientists good enough to be appointed co-chiefs. Von Rad agreed that there were advantages to PCOM members being co-chiefs. Duncan remarked that, since it happens rarely, it was not a concern. It kept high-level individuals involved in ODP's science. Curry saw no problem with PCOM members being co-chiefs, and felt that it was more important that co-chiefs be proponents.

Tamaki thought that PCOM members should not be co-chiefs, since they control planning. Watkins remarked that anyone would have to be a glutton to be a co-chief while on PCOM.

Mutter noted that there has has been criticism and believed that there was potential for conflict of interest. He thought it desirable that PCOM members be neither proponents nor co-chiefs.

Cowan felt that PCOM members should be allowed to be co-chiefs, so long as proponents on PCOM did not take part in discussion of their proposal. He had seen instances when that rule had been broken in the past. Jenkyns agreed with Cowan. The most scientifically-relevant co-chiefs must be chosen. Taylor said that his feelings were similar. He added that the issue of a person being a co-chief while on PCOM was less significant than that of a co-chief having been on PCOM when his/her leg was planned. Natland observed that he had seen PCOM members pursue a co-chief position at the expense of proponents. Furthermore, PCOM members can also influence the schedule. He stated that he would never be a co-chief on any leg on which he had had an opportunity to vote. Crawford favored picking the best person for the job, whether on PCOM or not. However, the process must be policed carefully and the outside community kept aware of the safeguards.

Austin said that he had become aware that outsiders' perceptions of PCOM and the reality are very different. PCOM must be extraordinarily aware of conflict of interest. He had informed EXCOM that PCOM is conscious of this issue. It would be worthwhile, at the Annual Meeting, for PCOM members to be aware of who are proponents. However, a potential problem is the need to maintain a quorum. A quorum was maintained at the April PCOM meeting, though 5 proponents left the room and a substitute chair was appointed during discussion/adoption of the 4-year plan. Austin noted that he was a proponent. His proposal was now part of the NARM-DPG report, but he did not feel that that removed the potential for conflict of interest. Proponents should not take part in discussion and voting, but, at the same time, PCOM must be able to conduct business (the same applies to other panels). PCOM members also represent their institutions. Austin stated that he would like feedback from all PCOM members on this issue before the Annual Meeting.

Lancelot pointed out that PCOM members, even if their names are not on proposals, also represent a lot of lobbies. He said that he would amend his earlier statement to the effect that no PCOM member should be a co-chief who is not a proponent. In response to a question from Taylor, Lancelot said that he would leave the room if he felt very close to a program, adding that all PCOM members have a disciplinary bias. Natland felt that if he was a potential lobbyist for offset drilling legs, he should never be a co-chief.

Austin stated that the minutes would reflect that PCOM members should not be co-chiefs *in lieu* of proponents. However, the issue of proponents and discussion is a problem: PCOM must be able to conduct business. Mutter echoed Natland. He would decline co-chief nominations while on PCOM. Nor would he submit proposals during that period. He suggested checking whether proposals have a higher chance of success when a PCOM member is a proponent, in order to see if the suspicion of "insider trading" is correct. Duncan disagreed. He doubted that PCOM could be dragged along by an individual pushing their own proposal. Furthermore, he pointed out that Mutter was on PCOM because of his good scientific ideas and he should, therefore, write proposals. Mutter responded that he felt that the potential for conflict of interest existed.

Natland thought that PCOM, at its April meeting, had been excessively sensitive about excluding proponents, since only the general direction of the drill ship was being set. Austin responded that PCOM would have to work on the question of how to conduct business. Cowan suggested that, if maintaining a quorum was a problem, the alternates for proponent PCOM members also attend the meeting. It was his perception that it was harder to vote a proposal down when a proponent was on a panel. There is a subtle pressure to be supportive.

Taylor stressed that there was nobody above PCOM to provide checks and balances. Austin said that a list of proponents on PCOM would be compiled and that PCOM would then have to consider how to operate at its Annual Meeting if there was not a quorum of non-proponents. Maintenance of a quorum was essential. Institutional bias was also an issue.

Austin reported that the Annual Co-Chief Scientists Review Meeting had recommended formalizing the interaction between co-chiefs and the JOIDES planning structure prior to the cruise date (Agenda Book, blue page 34). Austin could provide co-chiefs with panel minutes and invite them to panel meetings.

Natland stated that the co-chief on Leg 136 only found out aboard *JOIDES Resolution* about some required tasks. Golovchenko said that a similar situation had occurred on Leg 137. Austin doubted that PCOM could ask busy co-chiefs to attend many panel meetings. He could provide co-chiefs with panel minutes and encourage them to contact panel chairs. Natland stressed the importance of engineering changes. Austin noted that co-chiefs help write the leg prospectus. Taylor felt that having proponents as co-chiefs would help. PCOM felt that details concerning particular cases and co-chief attendance at particular panel meetings, should be at the discretion of the JOIDES Office.

920. Future Meetings

The 1991 PCOM Annual Meeting will be hosted by J. Austin and the JOIDES Office at the University of Texas at Austin, Institute for Geophysics (Thompson Conference Center), from 4-7 December 1991. The meeting will be preceded by the Panel Chairperson's meeting at the same location on 3 December 1991. A one-day field trip will be held prior to the meeting on Monday, December 2, for participants willing and able to travel to Austin on Sunday, December 1. The field trip's content will depend on weather (if good, a drive ~100 miles west of Austin to Enchanted Rock State Natural Area, a ~1 billion year old exfoliation dome of pink granite; if bad, something more local, perhaps fossil collecting in mid-Cretaceous platform limestone exposures around Austin).

The 1992 Spring PCOM meeting will be hosted by R. Duncan at Oregon State University, College of Oceanography, from 21-23 April 1992. A one-day field trip will be held on Monday 20 April, preceding the meeting, in the Coast Ranges (in all weathers). Attendees can fly to either Eugene or Portland and arrangements will be made through Allison Burns at JOI, Inc. to collect people at airports.

The 1992 Summer PCOM meeting will be hosted by J. Malpas, probably in Newfoundland, Canada. Tamaki noted that IGC and the Asian Marine Geology Conference conflict with the proposed dates (18-20 August). He suggested 11-13 August. Austin said that he would check with Malpas. A field trip may be held following the meeting.

The 1992 PCOM Annual Meeting was to have been hosted by J. Mutter at Columbia University, Lamont-Doherty Geological Observatory. However, Mutter noted that the weather in New York in December would not be favorable and suggested changing the order of PCOM meetings so that the meeting at LDGO could be in the spring. It was agreed that the 1992 Annual Meeting would be hosted by the University of Miami, Rosenstiel School of Marine and Atmospheric Sciences in November/December. Austin pointed out that PCOM usually meets during the week preceding AGU (AGU will be held on 7-11 December, 1992). No further details are available at the time of writing of these minutes.

921. Adjournment

Austin thanked the Bundesanstalt für Geowissenschaften und Rohstoffe, U. von Rad and D. Maronde, for hosting the August PCOM meeting.

The meeting was adjourned at 3:25 PM.

APPENDICES ATTACHED TO THE 20-22 AUGUST, 1991 PCOM MEETING

1. NSF report, supplemental information
2. JOI, Inc. report, supplemental information
3. Science Operator report, supplemental information
4. Wireline Logging report, supplemental information
5. EXCOM motion reconfirming messages to PCOM
6. Comparison of SGPP Atlantic ranking with global ranking
7. NARM-DPG, supplemental information
8. OD-WG, supplemental information
9. Comparisons between 1990 and 1991 global rankings of thematic panels
10. Science Operator engineering report, supplemental information
11. Report of co-chair of JOIDES-FDSN liaison group
12. Supplemental science proposals, supplemental information
13. Enewetak Atoll engineering test of shallow-water drilling
14. Guidelines for the Monitoring of Third-Party Tools

HANDOUT DISTRIBUTED AT THE 20-22 AUGUST, 1991 PCOM MEETING

1. Letter from R. Larson to J. Austin re: supplemental science proposal S-2

NSF REPORT

ODP PLANNING COMMITTEE

HANOVER, GERMANY

20-22 AUGUST 1991

NSF BUDGET

	1990 INCREASE	1991 INCREASE	1992 REQUESTED INCREASE
FOUNDATION TOTAL	8.3%	11.1%	17.5%
BIOLOGICAL/BEHAVIORAL	4.3%	7.5%	12.6%
COMPUTER/INFORMATION	11.9%	10.1%	23.1%
ENGINEERING	7.0%	7.5%	14.8%
MATHEMATICS/PHYSICAL	10.7%	7.1%	16.5%
EDUCATION	19.3%	46.4%	21.1%
ANTARCTIC PROGRAM	15.9%	15.2%	18.0%
GEOSCIENCES	5.2%	12.9%	14.1%
ATMOSPHERIC	6.1%	10.1%	15.8%
EARTH SCIENCES	11.1%	13.6%	9.3%
ARCTIC SCIENCES	22.0%	20.0%	18.8%
OCEAN SCIENCES	1.0%	11.8%	14.3%
Research Projects	2.8%	12.5%	19.0%
Centers/Facil	- 3.0%	11.8%	14.0%
Ocean Drilling	0.1%	9.3%	4.0%

1992 CONGRESSIONAL BUDGET ACTIONS

	1991	REQUEST	HOUSE	SENATE
RESEARCH	$1694	$1963	$1960	1926
EDUCATION	322	390	435	465
INSTR./FACIL	20	50	20	46
ANTARCTIC PROG	175	193	193	88
SALARIES/OPERATIONS	101	122	109	117
TOTAL	$2316	$2772	$2720	$2645

ODP OPERATIONS AND MANAGEMENT SUPPORT

	FY 1991	FY 1992
U.S. FUNDS	$ 23,091,900	$ 24,250,000
INTERNATIONAL	$ 16,500,000	$ 19,250,000
NSF FUEL SUPP.	$ 1,540,000	
TOTAL	$ 41,131,900	$ 43,500,000 *

* INCLUDES OPCOM

****

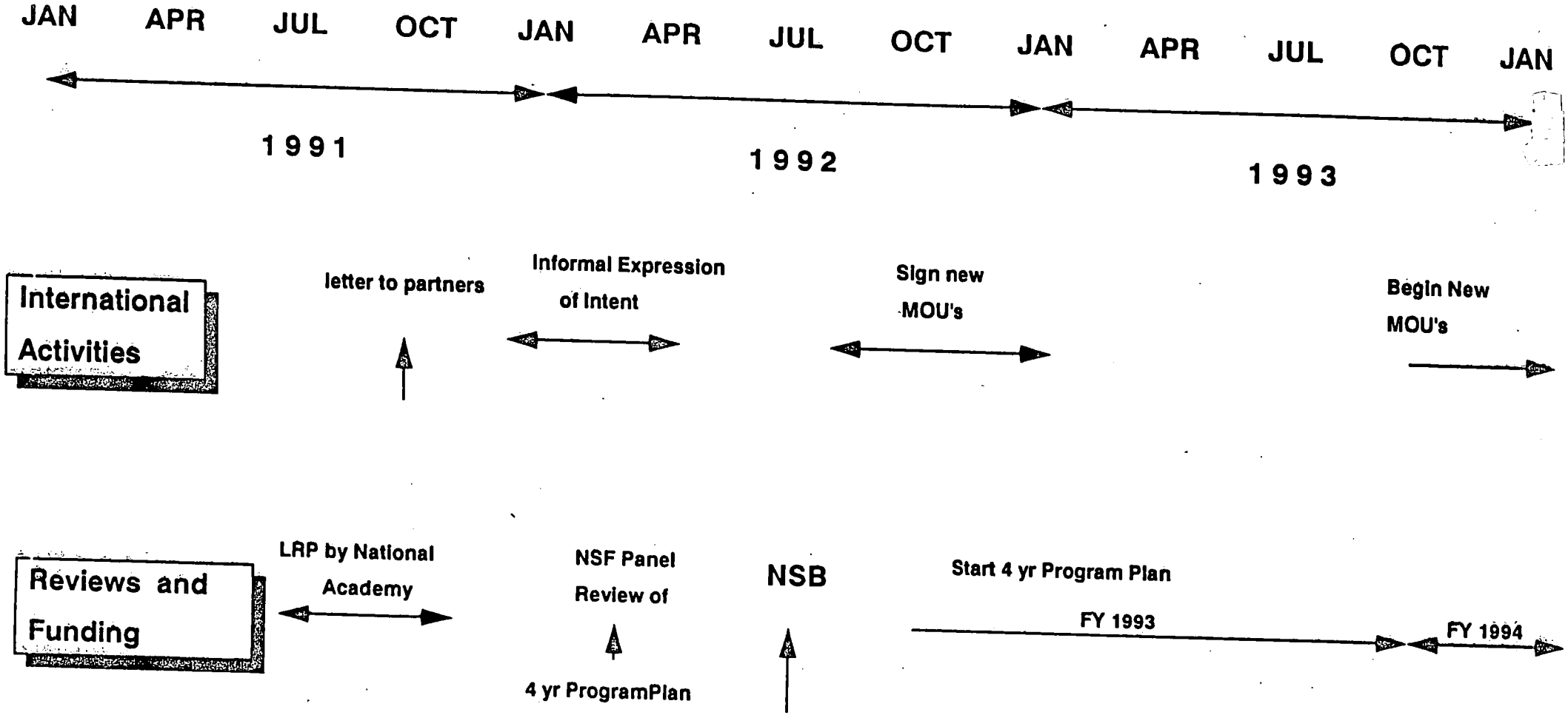
FY 1992 PROGRAM PLAN IS UNDER REVIEW AT NSF. PLAN SUBMITTED AT A BUDGET LEVEL OF $41.4 M. $2.1 M OPCOM INCREMENT WILL BE EVALUATED LATER.

****

JOI HAS BEEN GIVEN GUIDANCE ON PREPARATION OF THE 1993 TO 1996 PROGRAM PLAN. WILL BE REVIEWED IN EARLY 1992.

* BUDGET GUIDANCE IS CONSISTENT WITH LRP

* PER OPCOM/EXCOM/COUNCIL - ADDITONAL FACILITIES CAPABILITIES SHOULD BE CONSIDERED


JAN
APR
JUL
OCT
JAN
APR
JUL
OCT
JAN
APR
JUL
OCT
JAN
1991
1992
1993
International Activities
letter to partners
Informal Expression of Intent
Sign new MOU's
Begin New MOU's
Reviews and Funding
LRP by National Academy
NSF Panel Review of 4 yr ProgramPlan
NSB
Start 4 yr Program Plan
FY 1993
FY 1994
Funding Existing Approval
FY 1991
FY 1992

1991 NSF/ODP FIELD PROGRAMS

EAST PACIFIC RISE, 9 N.- OBS REFRACTION
PURDY (WHOI)

EAST PACIFIC RISE, 9 N.- HYDROTHERMAL CHEMISTRY-ALVIN
HAYMON (UCSB)

ANTARCTIC MARGIN - MCS with Britain / with DPP
Dalziel (Texas)
Hayes (LDGO)

CASCADIA MARGIN - SEDIMENT PROPERTIES - OBS
Yamamoto (Miami)

MARQUESAS - MULTIBEAM, GRAVITY, DREDGING/ with MGG
Kruse (Eckerd)

MARQUESAS - MCS / with MGG
McNutt (MIT)

KANE TRANSFORM - SCRIPPS DEEPTOW with French
Delaney (Washington)
Karson (Duke)

1992 FIELD PROGRAMS

VEMA TRANSFORM - LAMONT SEAMARC with French /with MGG
KASTENS (LAMONT)

HESS DEEP - NEAR BOTTOM REFRACTION
DORMAN (SCRIPPS)

9 N. ALVIN REVISIT
HAYMON AND OTHERS

CEARA RISE - SEISMIC AND CORING
CURRY (WHOI) AND MOUNTAIN (LDGO)

BARBADOS RIDGE -- 3D SEISMIC
SHIPLEY (TEX), MOORE (HIG), MOORE (UCSC)

OREGON MARGIN -- VSP
MOORE (HAWAII)

OTHER PROPOSALS STILL UNDER CONSIDERATION

FUTURE OF ODP, POST-1993

FINANCIAL REQUIREMENTS

ESTIMATES from the Long Range Plan

FY92	FY93	FY94	FY95
$43.6 M	45.3	48.3	50.7
PP 41.4	+1.7M	+3.0	+2.6
OPCOM 2.1			
43.5			
Δ = -0.1			

FY96	FY97	FY98
50.7	50.5	52.1
-0.2	-0.2	+1.6

- END J.R. LEASE
- ALTERNATE PLATFORMS?

FY99	FY2000	FY01	FY02
55.4	56.7	57.5	59.8
+3.3	+1.3	+0.8	+2.3

ASSUMPTIONS	P.A.
PAYROLL & PUBLICATIONS	+6%
OTHER "STD." ITEMS	3
SHIP DAYRATES	3
SCHLUMBERGER LOGGING	6

$\Sigma = +37\%$

10 YEARS

$\bar{X} = +3.7\%$

FUTURE OF ODP, POST-1993

FINANCIAL REQUIREMENTS (cont.)

UNCERTAINTIES

- INFLATION ASSUMPTIONS
- ENG./TECH. DEVELOPMENT ESTIMATES
  - DCS
  - DEEP DRILLING
  - SLIMLINE RISER?
  - HOLE REAMING
  - HI-TEMP. DRILLING
  - HI-TEMP. LOGGING
  - DOWNHOLE OBSERV. DEPLOYMENT
  - .... etc.
- SOE
  - H_2S SAFETY
  - ICE SUPPORT SHIPS
- J.R. LEASE IN 1998
- ALTERNATE PLATFORMS?
  - NUMBER, COST, MANAGEMENT
- SCIENCE TRENDS / DISCOVERIES

FUTURE OF ODP, POST-1993

INTERACTIONS WITH OTHER INITIATIVES

★ LIAISON GROUPS ESTABLISHED

GSGP, FDSN, NAD, Inter-RIDGE

★ PENDING

JGOFS

★ LIMBO

IGBP/PAGES

★ OTHER INTERACTIONS

CONT./GEOTHERMAL DRILLING

USSR - NEDRA

ODP deep-drilling plans

Lake Baikal drilling plans (paleoclim.

GERMANY - KTB

High-temp. logging/sampling (July 24-25

U.K. - CAMBORNE

High-temp. logging - subcontract

U.S. - DOSECC

Eng. development

FUTURE OF ODP, POST-1993

INTERACTIONS (cont.)

★ OTHER INTERACTIONS (cont.)

U.S. - DEPT. OF ENERGY (SNL, LANL, LBL)

High-temp. tool use (borrow, lease)

FRANCE - BRGM / PLASTEIGE, S.A.

High-temp. logging tool and cable - subcontract

PROGRAM PLAN

	FY92 Budget Summary ($K)			FY91 (including SOE)
	Standard	**SOE**	**Total**	**Total**
Drilling & Engineering	3,716	1,230	4,962	4,659
Tech. & Log. Support	4,150		4,170	3,675
Science Operations	1,125	160	1,311	1,142
Science Services	3,469	161	3,579	3,703
Headquarters/Admin.	1,916		1,905	1,845
Subtotal	14,376	1,551	15,927	15,024
Ship Operations	19,878		19,878	19,284
Total TAMU	**34,254**	**1,551**	**35,805**	**34,308**
L-DGO				
General	1,583	140	1,869	1,740
Schlumberger	1,941		1,941	1,832
Total LDGO	**3,810**	**140**	**3,950**	**3,572**
JOI/JOIDES	**1,450**		**1,450**	**1,341**
MRC's *	**70**		**70**	**70**
TOTALS:	39,584	**1,691**	41,275	**39,291**
NSF Target	41,400			39,300
SOE to be determined		**125**	**125**	
Hi-T/Slimline tools				**300**
Grand Totals:	**39,584**	**1,816**	**41,400**	**39,591**

* Micropaleontological Reference Centers

Summary of FY92 Special Operating Expenses

TAMU

1.	$ 70,000	**Publications** - To print additional material, working to eliminate the backlog and attain a steady state of publication by the end of FY92.
2.	$ 91,000	**Gulf Coast Repository** - For the expansion of the Gulf Coast Repository.
3.	$ 350,000	**Drilling Operations** - For necessary supplies and operational requirements to support Hess Deep activities.
4.	$ 880,000	**Diamond Coring System** Phase II - $660K - For supplies, equipment, subcontracts, technical support, etc. Phase III - $220K - For long lead items, subcontract support for additional design efforts.
5.	$ 160,000	**Science Support** - Intended for the purchase of scientific equipment based on the recommendations from SMP, IHP, and the scientific community. Purchases for FY92 may include a real time navigation system, fantail equipment, computer upgrades, doppler pit log, laboratory modifications, and/or a split-core Multi-Sensor Track.
	$1,551,000	TOTAL TAMU Special Operating Expenses

LDGO

6.	$ 140,000	High-temperature electrical resistivity tool
	$ 140,000	TOTAL LDGO Special Operating Expenses
	$1,691,000	TOTAL Special Operating Expenses at TAMU & LDGO
	$125,000	Unspecified
	$1,816,000	**Total Special Operating Expenses**

4.6% OF TAMU x LDGO BUDGETS

* EXCEEDS 4% OBJECTIVE *

PRESENT STATUS & RECENT PAST

PROGRAM MANAGEMENT ISSUES / INFO

- ☆ FUEL COSTS / DAY RATES
- ☆ PERSONNEL AT LDGO
  - R. Jarrard leaving
  - FY92 Prog. Plan adds 3 people
- ☆ HI-TEMP., SLIMLINE TOOLS
  - JAPEX / GSC CONTRACT NEGOTIATED (T, P, F)
    Delivery this port call
  - LOS ALAMOS & LBL SAMPLERS LEASED AND TESTED
  - BRGM / PLASTELEC CONTRACT NEG. (T, CABLE)
    Cable Delivery not made on time
  - LOAN OF EQPT. FROM SNL ARRANGED
  - OTHER, LESS CAPABLE, CABLE PURCHASED
  - CAMBORNE - SPECS. AGREED AND FY92 PROPOSAL RECEIVED (RESISTIVITY)
  - DISCUSSIONS WITH KTB (mtg. 6/24, Hannover)
  - NSF: von HERZEN & CANN (T, P, FLOW, COND., DIAM. + SAMPLER?)
- ☆ ESTABLISHMENT OF LIAISON GROUPS NEARLY COMPLETE
- ☆ PCOM PRIORITIZATION & OPCOM ## SHOULD IMPROVE ENG./TECHNOL. FOCUS

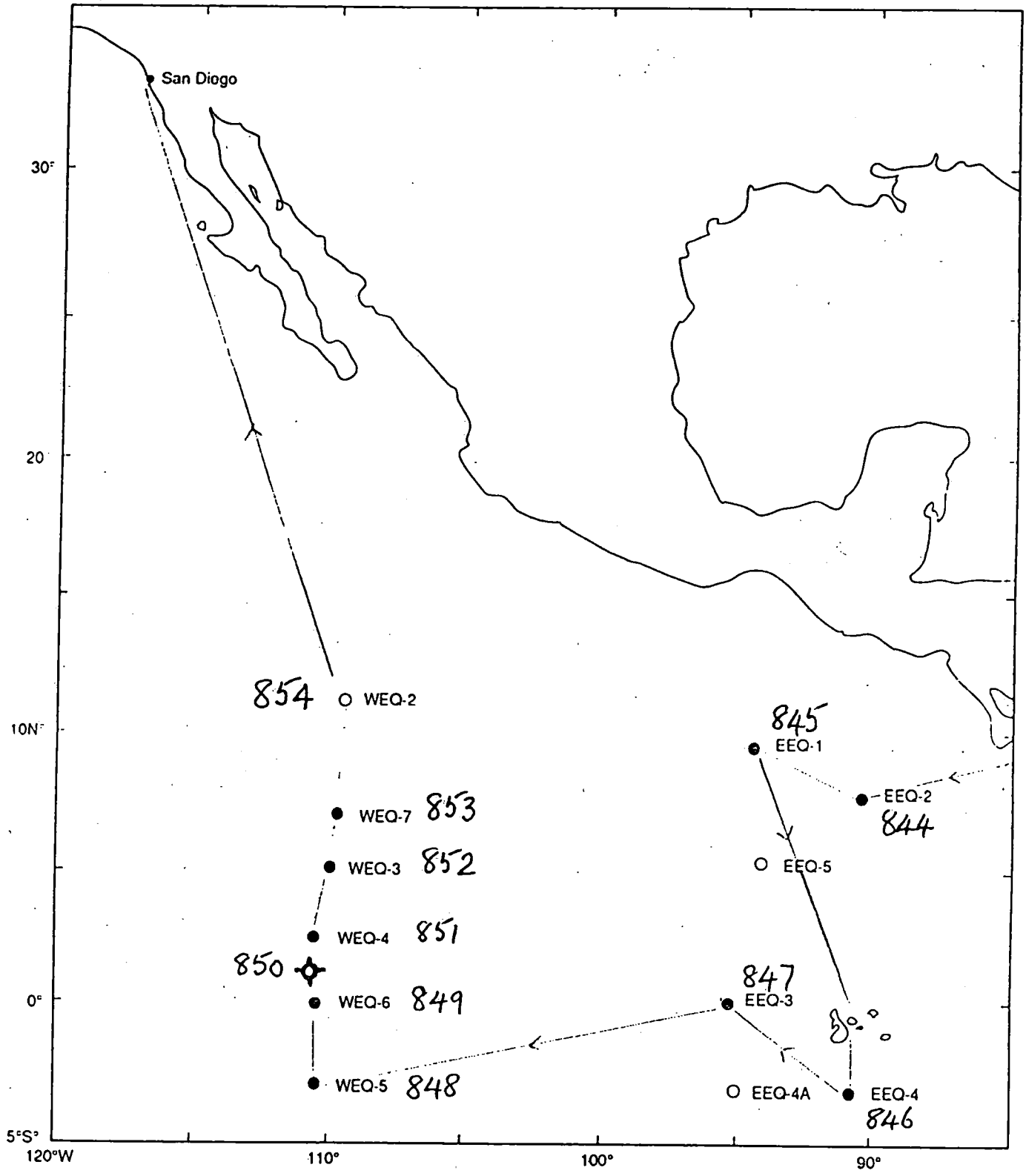
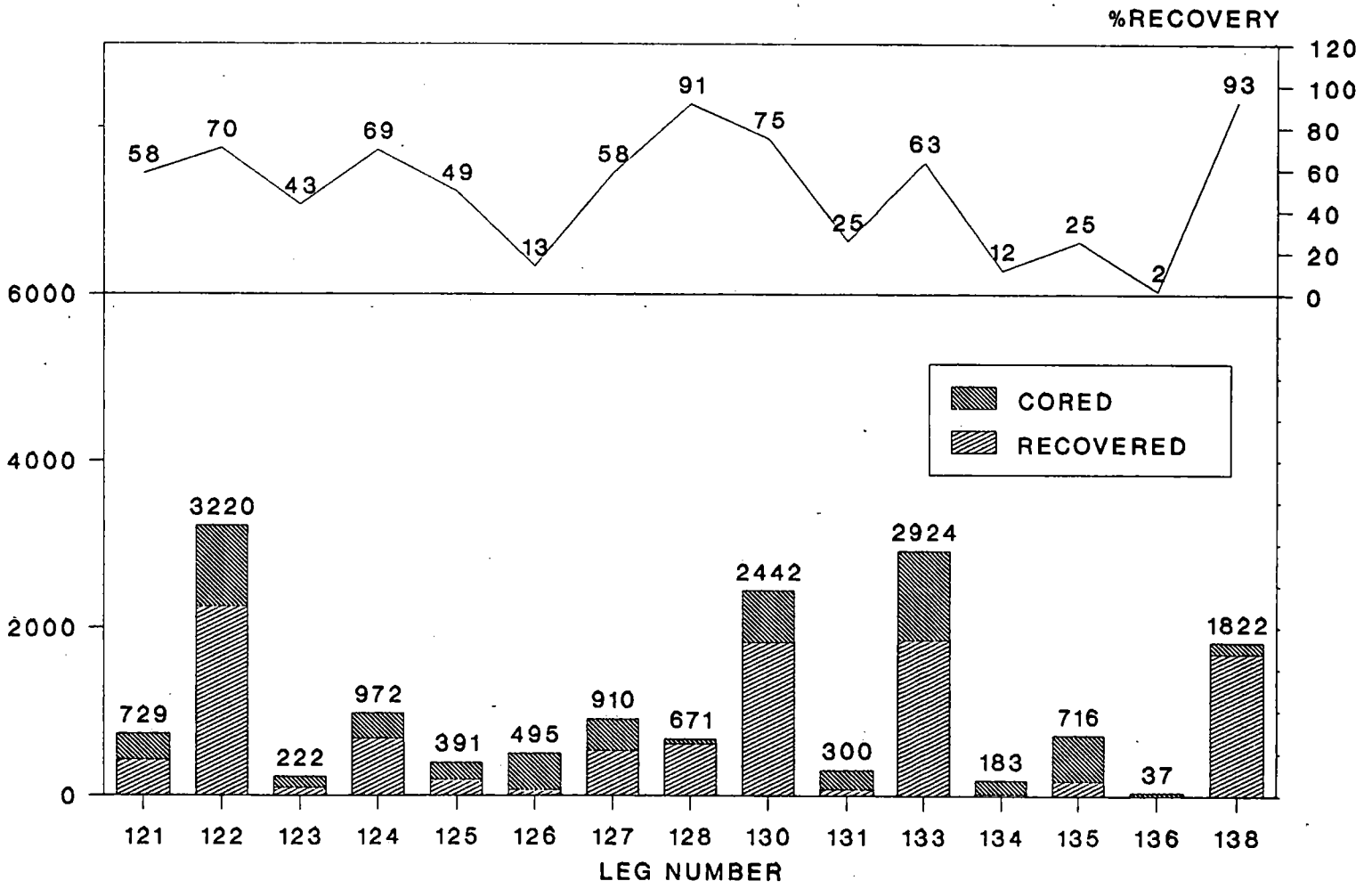


Figure 3. Proposed Leg 138 drilling sites surveyed by the R/V *Thomas Washington*, Venture Leg 1. Solid circles: priority 1 sites; open circles: priority 2 sites.

OCEAN DRILLING PROGRAM

XCB RECOVERY by Leg

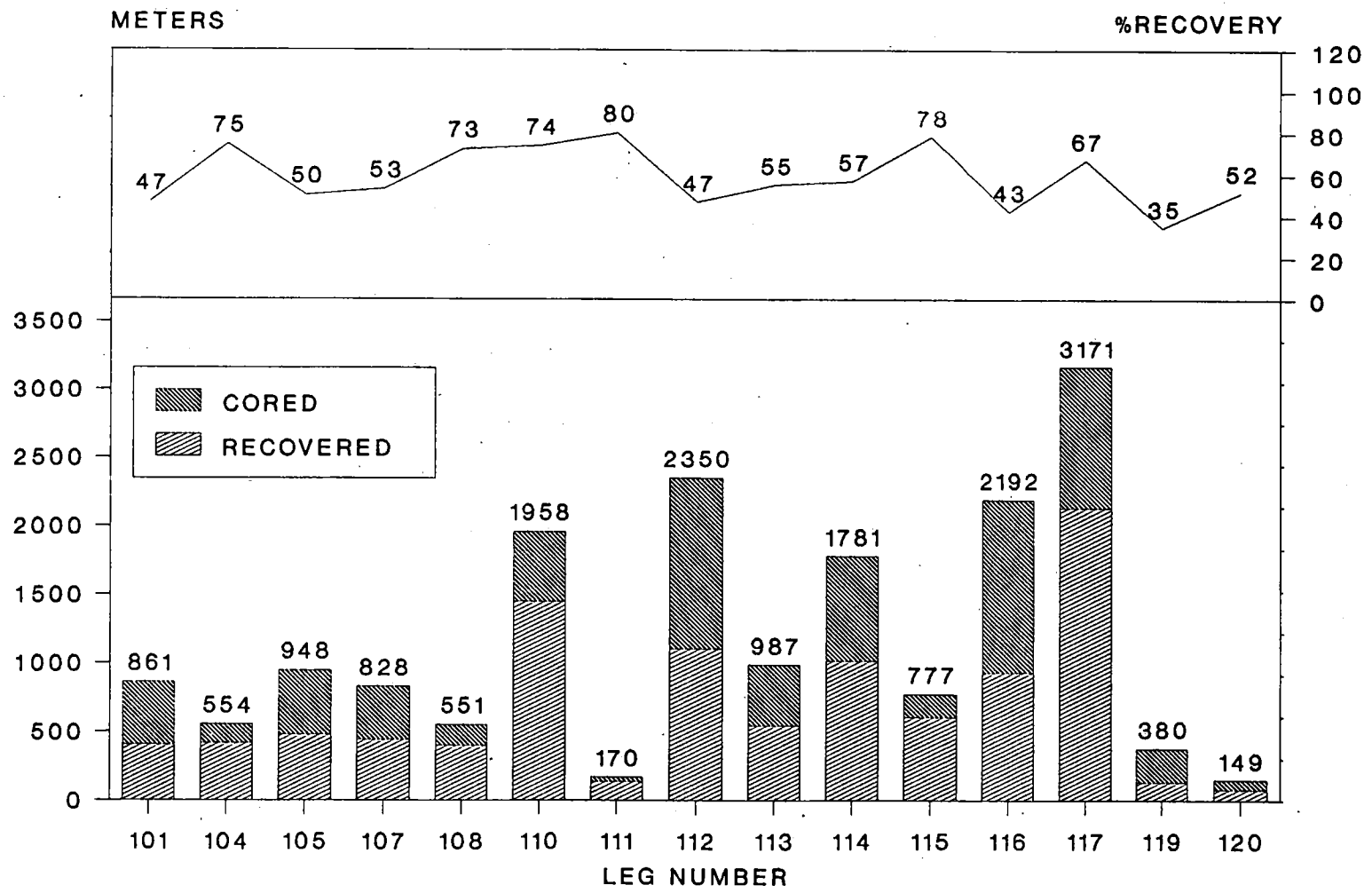
Holes > 200 mbsf



OCEAN DRILLING PROGRAM

XCB RECOVERY by Leg

Holes > 200 mbsf



133 LEG | 825 SITE | A HOLE | 5H CORE | 200.0-209.5 mbsl; ____ mbsf CORED INTERVAL

BIOSTRAT. ZONE / FOSSIL CHARACTER

TIME-ROCK UNIT: middle Miocene

FORAMINIFERS: N10-N14

NANNOFOSSILS: CN5-CN11

RADIOLARIANS: A/P

DIATOMS: C/P

PALEOMAGNETICS | PHYSICAL PROPS. | CHEMISTRY | SECTION | GRAPHIC LITHOLOGY | DRILLING DISTURB. | SED. STRUCTURES | SAMPLES

PHYSICAL PROPS.: 1.84 g/cm³ • 52.5% • 95.50 • 1.89 • 53.6 • 97.70 • 2.02 • 43.4 • 155.80 • 1.82 • 55.0 • 94.40 • 1.80 • 52.0 • 97.60 • 1.91 • 65.6 • 97.40

SECTION: 1 2 3 4 5 6 7 CC

GRAPHIC LITHOLOGY: C B 4 | C B 8 | CB4 | CB8 | ULFT | CB4 | CB8 | ULPK | CB4 | CB8 | ULPK | CB4 | CB8 | CB4 | CB8 | ULPK | C B 4 | C B 8

SAMPLES: * | *a | TW | P

LITHOLOGIC DESCRIPTION

CORE 133-825A-5H

CALCAREOUS OOZE and CHALK; BIOCLASTIC PACKSTONE and FLOATSTONE

Major Lithology: White (10YR 8/0) CALCAREOUS OOZE with NANNOFOSSILS and FORAMINIFERS interbedded with CALCAREOUS CHALK; the latter forming either discrete beds or intervals containing chalk lumps.

Minor Lithology: White (10YR 8/0), unlithified BIOCLASTIC PACKSTONE and FLOATSTONE, the latter with a matrix of calcareous ooze.

FORM COMPLETED BY:

Leg	133	133
Site	825	825
Hole	A	A
Core	5	5

FORM COMPLETED BY:
Slide summary (%)

Section	01	03
Interval	100	126
Lithology	D	D
Texture		
Sand		
Silt		
Clay		
Components		
CALCITE		80
FORAMS	15	
INTRACLAST	55	
LITHOCLAST	2	
MICRITE	15	15
NANNOS	10	5
SPICULES	3	

Leg	133	
Site	825	
Hole	A	
Core	5	

FORM COMPLETED BY:
Slide summary (%)

Section	03	
Interval	125	
Lithology	D	
Texture		
Sand		
Silt		
Clay		
Components		
BIOCLAST	80	
FORAMS	10	
INTRACLAST	10	

Nannofossils
Diatoms
Radiolarians
Sponge Spicules
Silicoflagellates
Fish Remains
Plant Debris

FM 7002

REV. 2/87

SITE 825 HOLE A CORE 5H CORED INTERVAL 200.0-209.5 mbsf

TIME-ROCK UNIT	BIOSTRAT. ZONE/ FOSSIL CHARACTER: FORAMINIFERS	NANNOFOSSILS	RADIOLARIANS	DIATOMS	PALEOMAGNETICS	PHYS. PROPERTIES	CHEMISTRY	SECTION	METERS	GRAPHIC LITHOLOGY	DRILLING DISTURB.	SED. STRUCTURES	SAMPLES
MIDDLE MIOCENE	A/P N10 - N14	C/P CN5 - CN11			R?	● 52.5% 1.87	● 95.5%	1	0.5 1.0				*
					R?	● 53.6% 1.89	● 57.75	2					
					R	● 43.4% 1.82	● 55.8%	3					□*
					R	● 55.0% 1.82	● 98.4%	4					
					R	● 52.0% 1.86	● 97.6%	5					
					R	● 65.6% 1.91	● 97.4%	6					
								7					

CALCAREOUS OOZE and CHALK; BIOCLASTIC PACKSTONE and FLOATSTONE

Major lithology: White (10YR 8/0) CALCAREOUS OOZE with NANNOFOSSILS and FORAMINIFERS interbedded with CALCAREOUS CHALK; the latter forming either discrete beds or intervals containing chalk lumps.

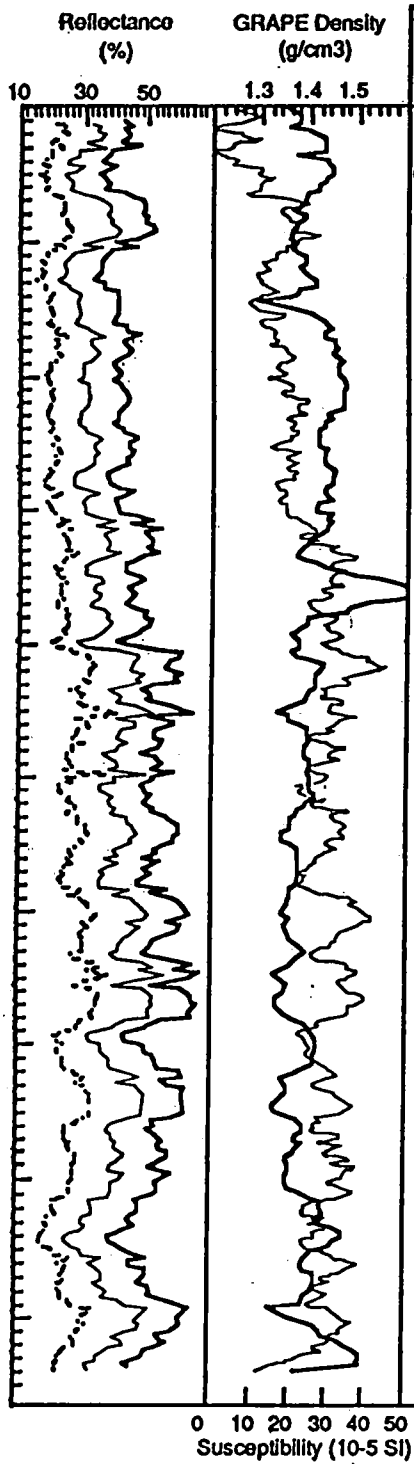
Minor lithology: White (10YR 8/0), unlithified BIOCLASTIC PACKSTONE and FLOATSTONE, the latter with a matrix of calcareous ooze.

SMEAR SLIDE SUMMARY (%):

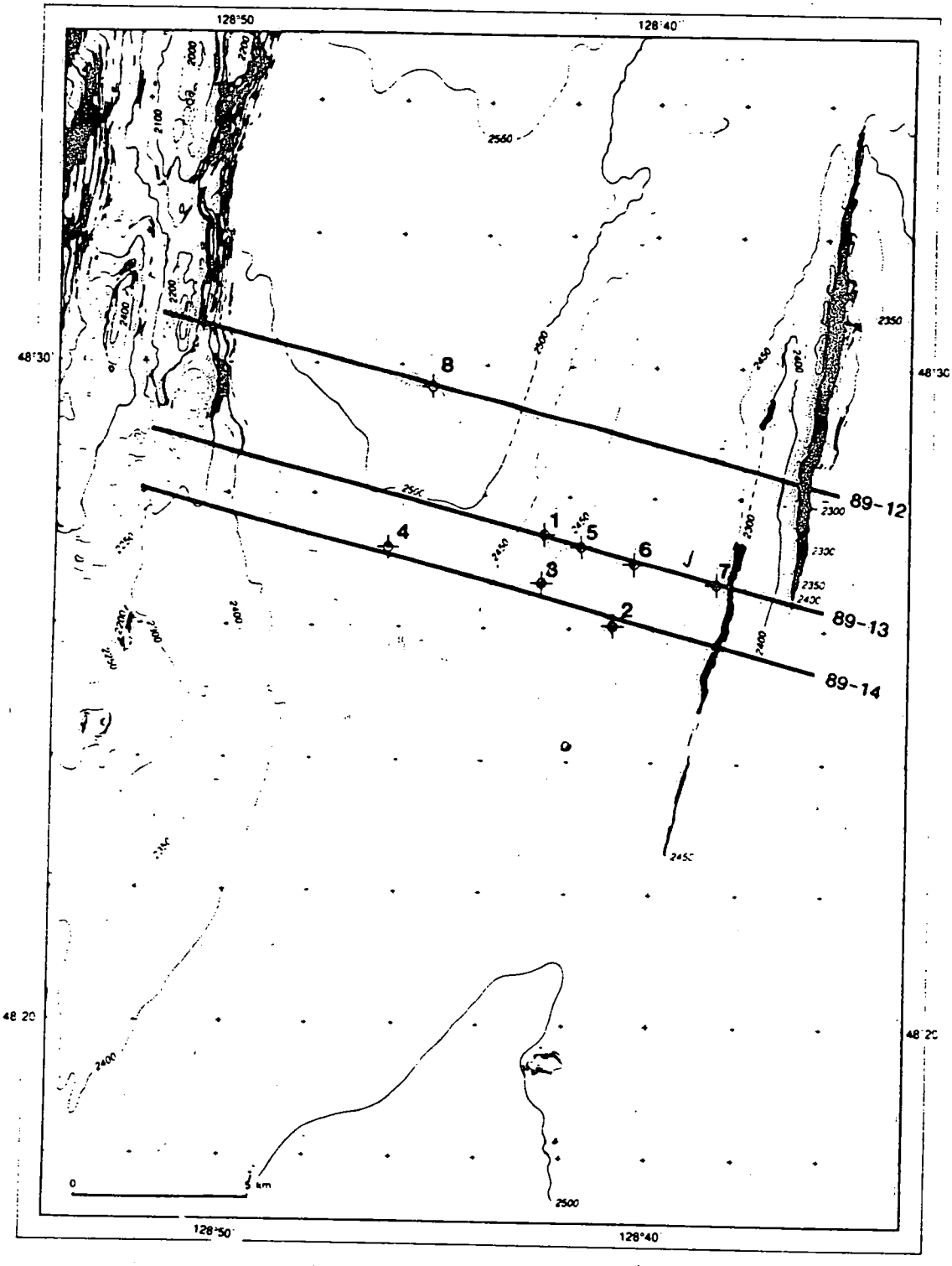
	1, 100 D	CF 3, 125 D	3, 126 D
COMPOSITION:			
Bioclast	---	80	---
Calcite	---	---	80
Foraminifers	15	10	---
Intraclasts	55	10	---
Lithoclast	2	--	---
Micrite	15	---	15
Nannofossils	10	---	5
Spicules	3	---	---

A 2W, 3W, 4W WASH CORES

SITE 854 HOLE B CORE 2H — CORED 8.4 - 17.9 mbsf

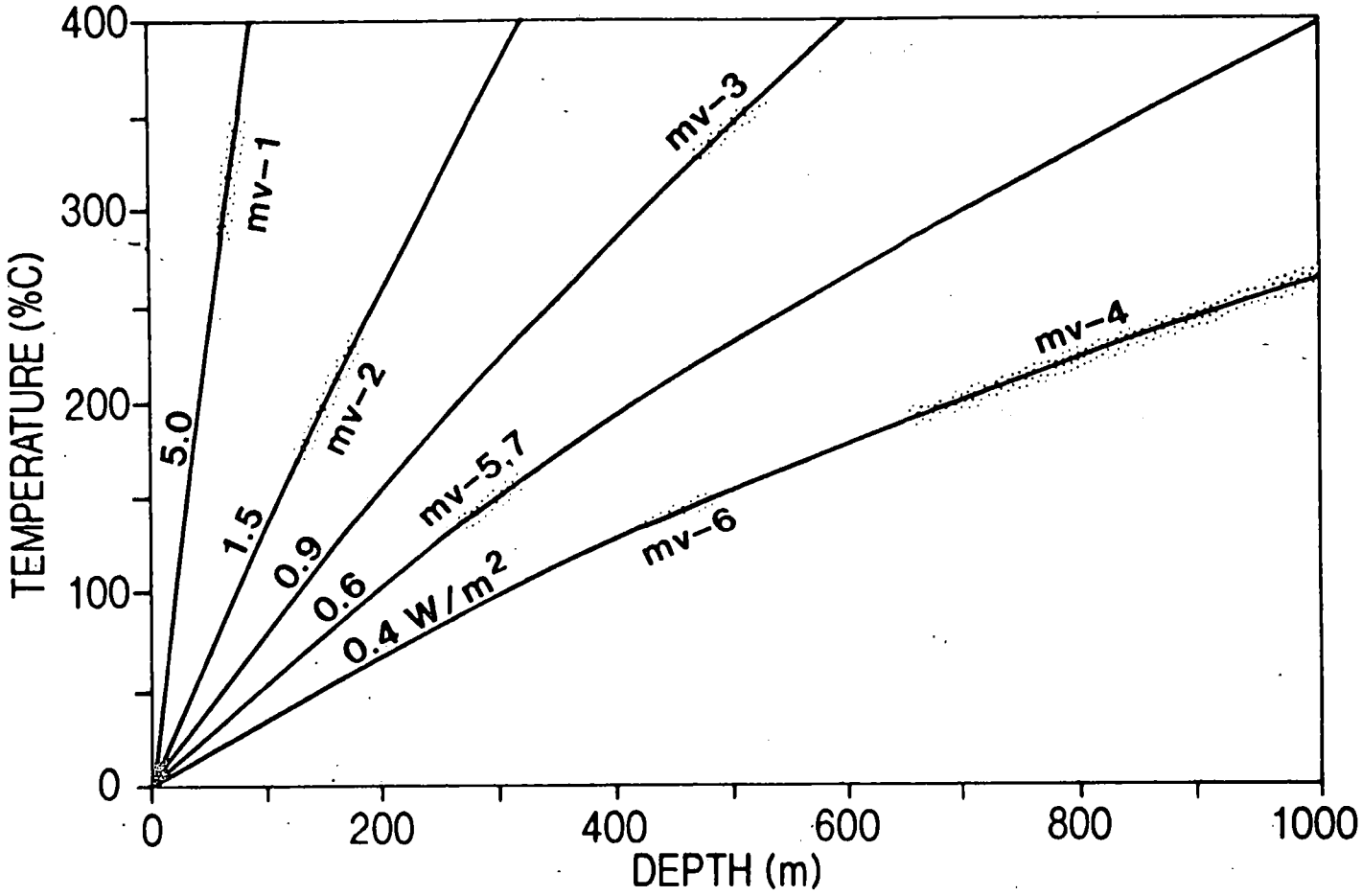


Meter	Graphic Lith.	Section	Age	Structure	Disturb	Sample	Color	Description
0.5		1	Upper Pliocene			S	10YR 6/4	DIATOM FORAMINIFER CLAY WITH OXIDES, CLAYEY NANNOFOSSIL OOZE WITH RADIOLARIANS and CLAYEY FORAMINIFER NANNOFOSSIL OOZE W/ OXIDES & RADIOLARIANS
1.0							10YR 3/3	
		2				S	10YR 4/3	Major Lithologies: The dominant lithology in Section 2 is dark brown DIATOM FORAMINIFER CLAY WITH OXIDES. In Sections 3 through 6 the dominant lithology is light brownish yellow CLAYEY NANNOFOSSIL OOZE WITH RADIOLARIANS. From the middle of Section 6 through the core catcher, and interbedded in Sections 3 through 6 is dark brown CLAYEY FORAMINIFER NANNOFOSSIL OOZE W/ OXIDES & RADIOLARIANS.
		3						
		4					10YR 6/4	Minor Lithologies: The top of Section 1 is dark brown to light yellowish brown FORAMINIFER CLAYEY NANNOFOSSIL OOZE, and the lower part of Section 1 is dark brown DIATOM CLAY WITH OXIDES.
		5				S		General Description: TRACE FOSSILS: Bioturbation is generally light to moderate with more intense burrowing within the darker beds in which Zoophycos is often seen. Solid burrows and Planolites are abundant with occasional vertical burrows.
		6						
		7				S	10YR 4/3	BANDING CONTRAST: Slight to moderate.
		CC						

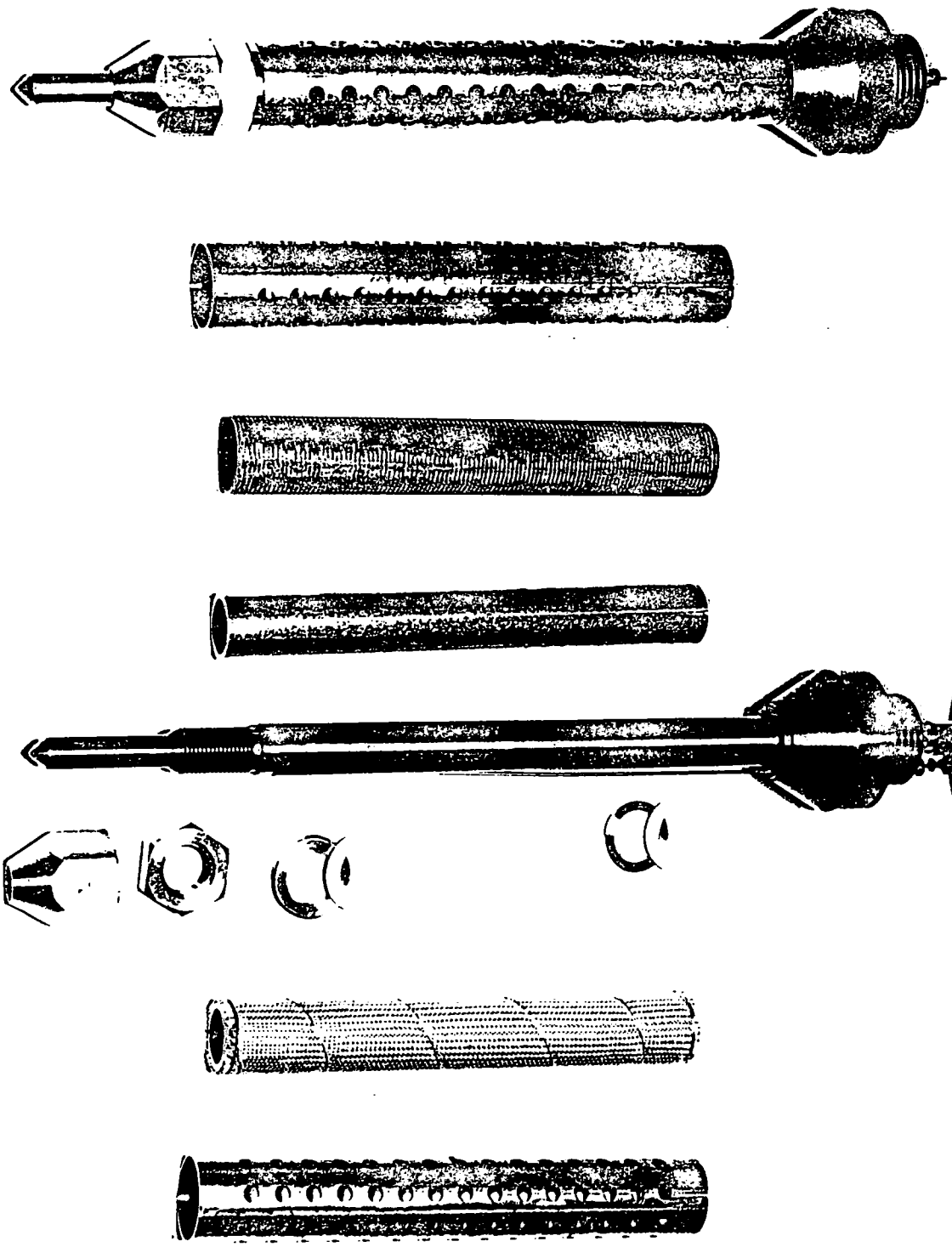


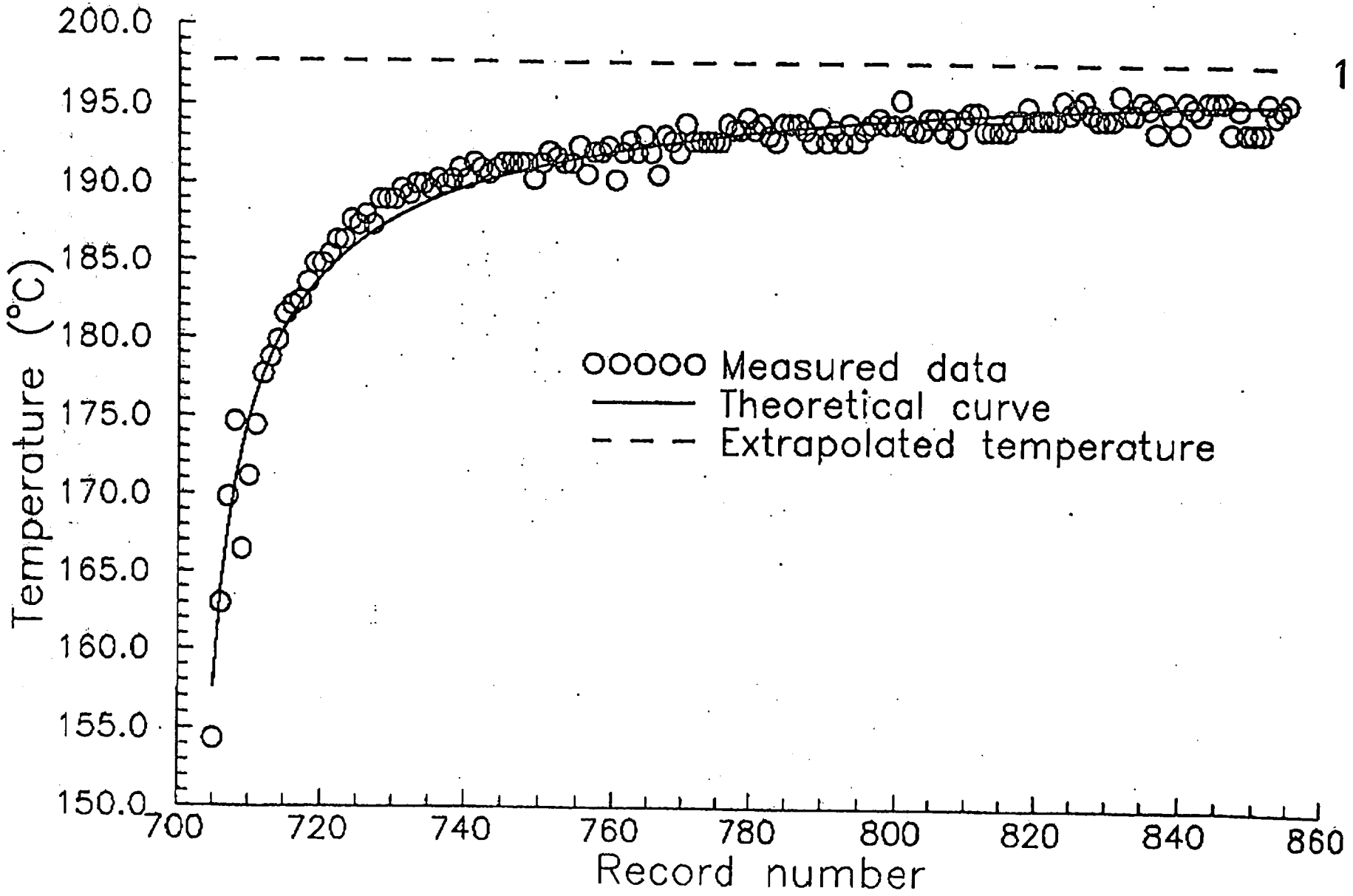
BATHYMETRY (UNCORRECTED METERS)

Seabeam-derived bathymetry of the area outlined in Figure 2, with contours shown at 10 m intervals. Locations of primary and alternate drilling sites MV-1 through MV-8 are shown, as are tracklines of the multi-channel seismic reflection profiles shown in Figures 9 and 10.

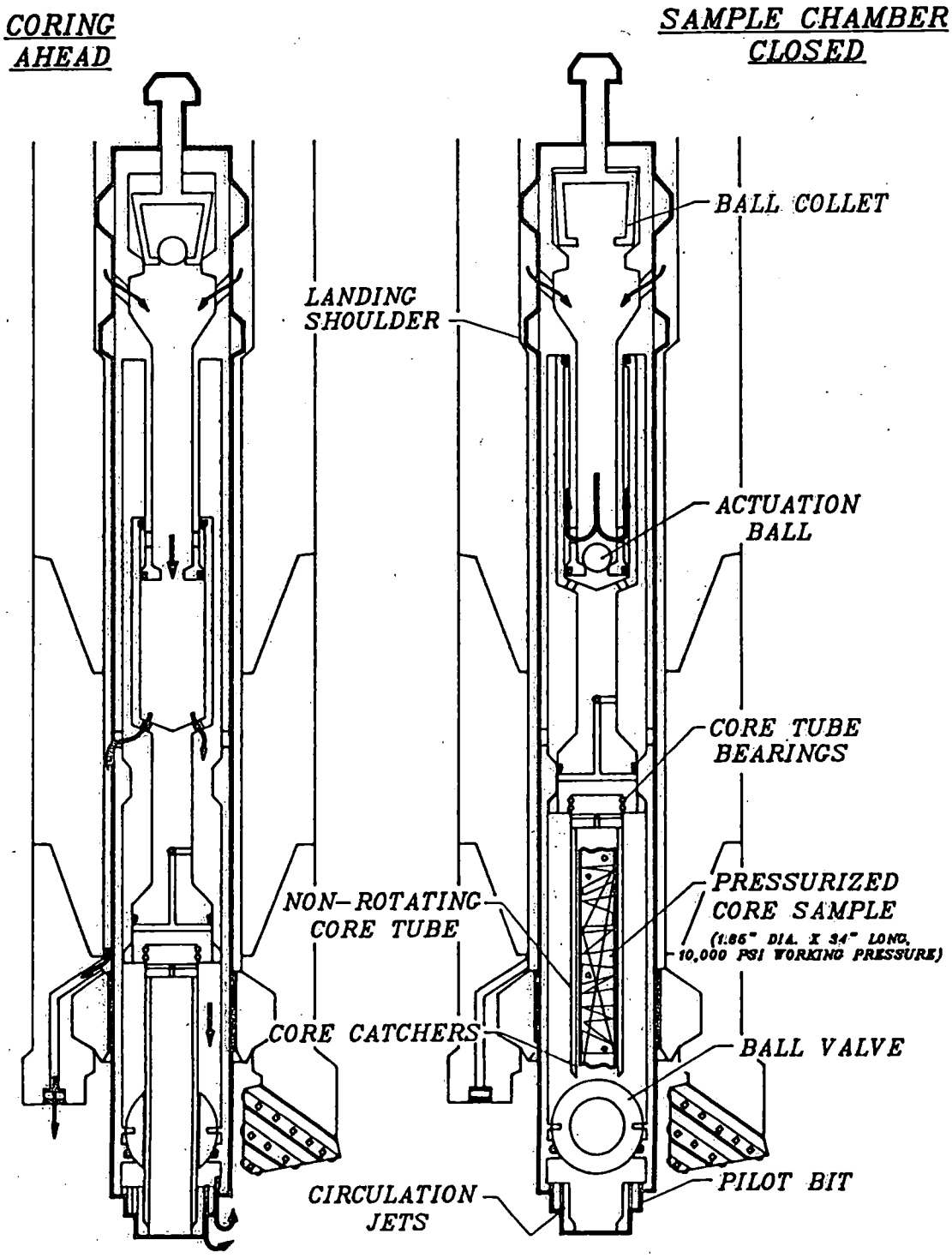


Estimated temperature-depth profiles at Middle Valley drilling sites. Stippled regions show the minimum depths to "basement" at each site. The conductivity-depth function used was estimated from MCS seismic velocities determined for the sediment section.





PRESSURE CORE SAMPLER (PCS)
OPERATING SCHEMATIC



LEG 140

DEEPENING HOLE 504B

CO-CHIEF SCIENTISTS: HENRY DICK (WHOI)
JÖRG ERZINGER (UNIV. GIESSEN, GERMANY)

ODP STAFF SCIENTIST: LAURA STOKKING
ODP OPERATIONS SUPT: GENE POLLARD
ODP LAB OFFICER: BURNEY HAMLIN

PRE-CRUISE MEETING HELD MID-MAY, PROSPECTUS APPEARED JUNE '91.

LEG 141

CHILE TRIPLE JUNCTION

CO-CHIEF SCIENTISTS: JAN BEHRMANN (UNIV. GIESSEN, GERMANY)
STEVE LEWIS (USGS)

ODP STAFF SCIENTIST: ROBERT MUSGRAVE
ODP OPERATIONS SUPT: DAVE HUEY
ODP LAB OFFICER: BILL MILLS

PRE-CRUISE MEETING HELD MID-JUNE, PROSPECTUS EARLY AUGUST '91.

LEG 142

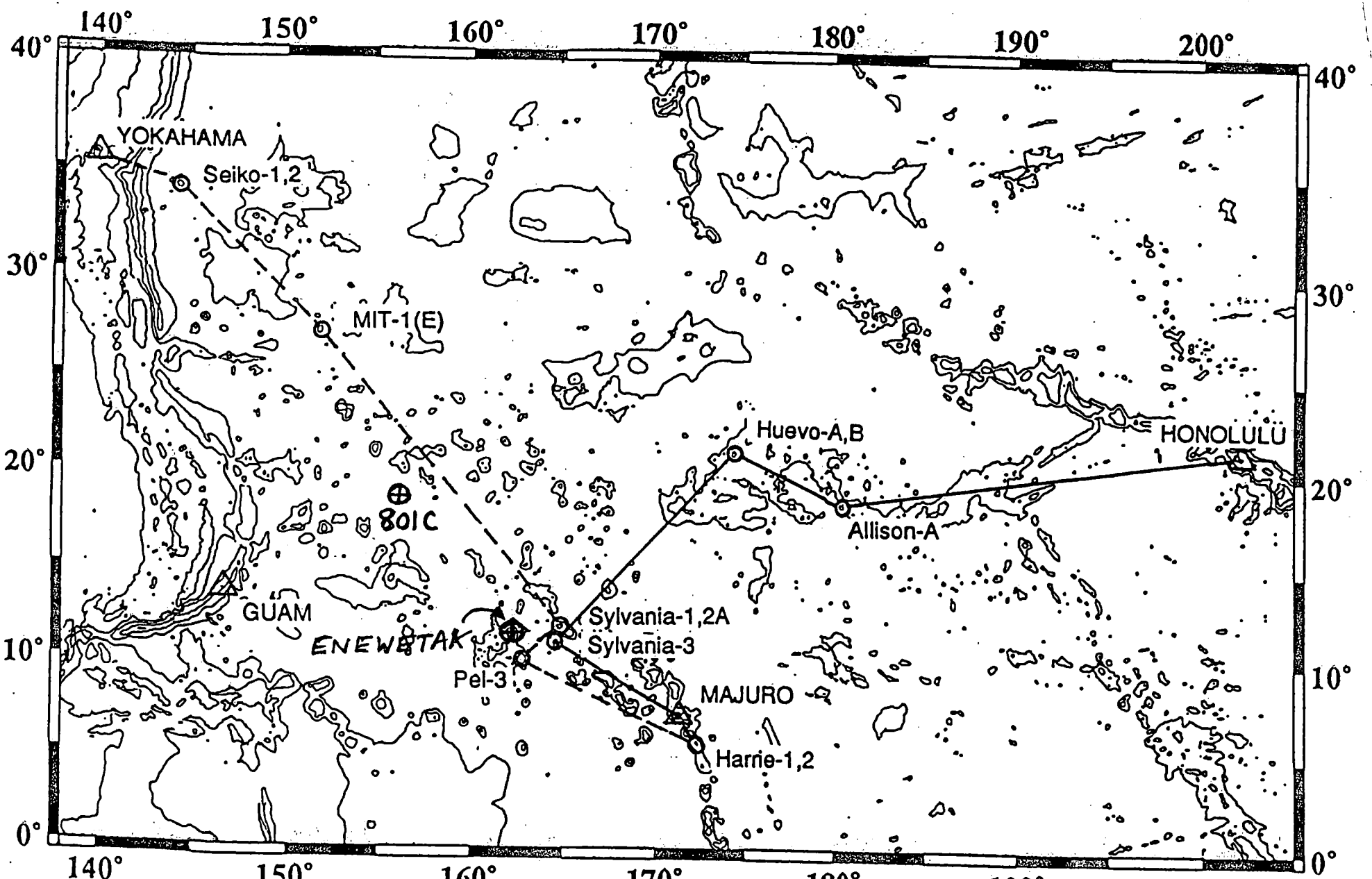
ENGINEERING, EPR

ODP ENGINEERING TEAM LED BY: MIKE STORMS

CO-CHIEF SCIENTIST: RODEY BATIZA (HAWAII)
ODP STAFF SCIENTIST: JAMIE ALLAN
ODP LAB OFFICER: BRAD JULSON

PRE-CRUISE MEETING END OF AUGUST

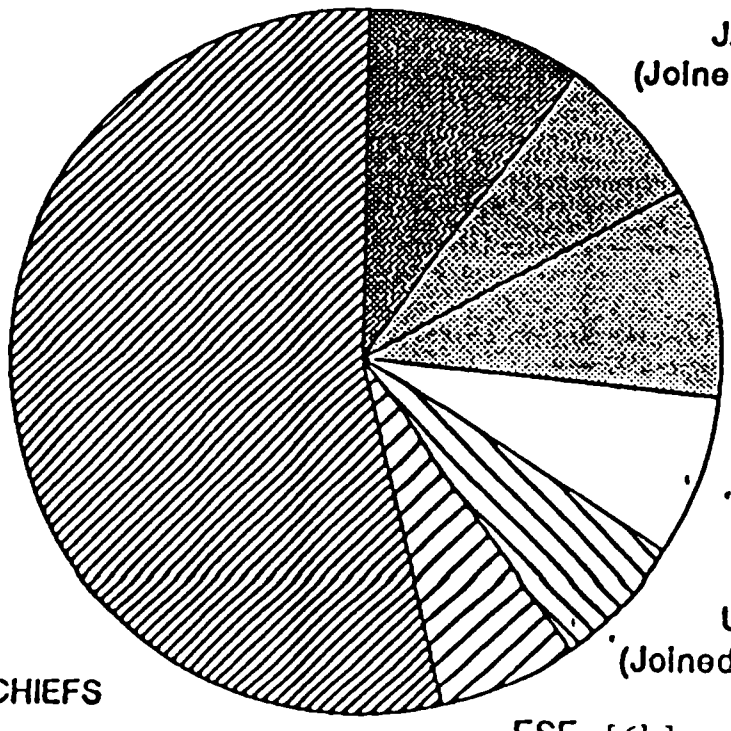
LEG 143	CO-CHIEF SCIENTISTS:	WILL SAGER (TAMU) JERRY WINTERER (SIO)
ATOLLS AND GUYOTS A	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	JOHN FIRTH GENE POLLARD BILL MILLS
LEG 144	CO-CHIEF SCIENTISTS:	JANET HAGGERTY (UNIV. OF TULSA) ISABELLA PREMOLI-SILVA (ITALY/ESF)
ATOLLS AND GUYOTS B	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	AMANDA PALMER-JULSON GLEN FOSS BURNEY HAMLIN
LEG 145	CO-CHIEF SCIENTISTS:	IVAN BASOV (USSR) DAVE REA (UNIV. OF MICHIGAN)
NORTH PACIFIC TRANSECT	ODP STAFF SCIENTIST: ODP OPERATIONS SUPT: ODP LAB OFFICER:	TOM JANECEK RON GROUT BRAD JULSON
LEG 146	CO-CHIEF SCIENTISTS:	BOBB CARSON (LEHIGH UNIV.) GRAHAM WESTBROOK (UK)
CASCADIA		



SHIP TRACK RECOMMENDED FOR LEGS 143 (SOLID LINE) AND 144 (DASHED LINE)
BY ATOLLS AND GUYOTS DETAILED PLANNING GROUP

[ ] EXPECTED NUMBER OF CO-CHIEFS BY END 1992

CO-CHIEF SCIENTISTS
LEGS 101-142



TOTAL: 81 CO-CHIEFS

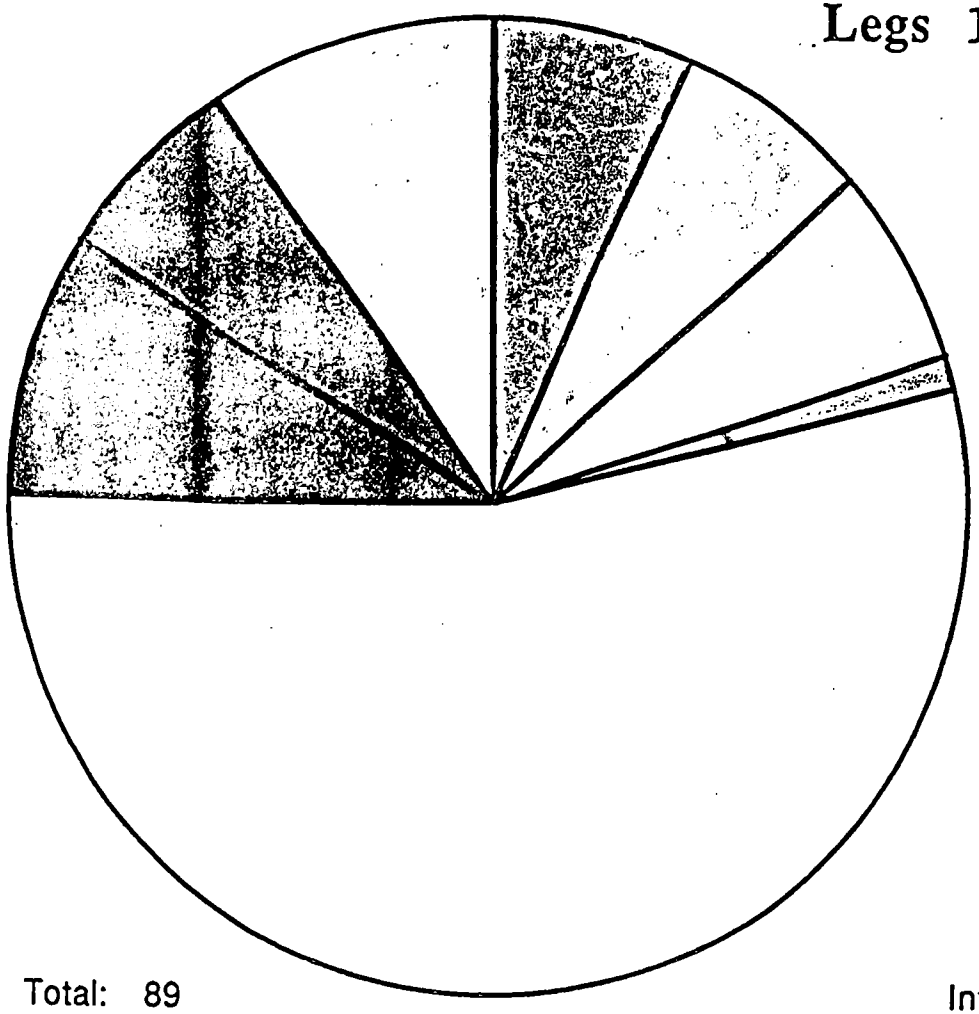
	Deficit
	0
	1
	0
	2
	2
	1½
	1½
	8

U.S. CO-CHIEFS BY INSTITUTE

LEGS 101-142

INSTITUTE	NO.	NAMES
University of Miami	4	Schlager/Honnorez/Becker/Becker
University of Texas at Austin	1	Austin
Texas A&M University	0	
University of Rhode Island	4	Arthur/Detrick/Kennett/Larson
University of Washington	0	
Oregon State	3	Suess/Duncan/Pisias
Scripps	4	Sallisbury/Winterer/Natland/Hawkins
Lamont	4	Kastens/Ruddiman/Cochran/Weissel
Woods Hole	3	Bryan/von Herzen/Dick
University of Hawaii	6	Fryer/Taylor/Kroenke/Wilkens/Mottl/Batiza
University of California Santa Cruz	2	Moore/Silver
USGS	4	vonHuene/Barron/Greene/Lewis
University of Florida	1	Ciesielski
Brown	1	Prell
Florida State University	1	Wise
NSF	1	Haq
Stanford	1	Ingle
Harvard	1	Dziewonski
Independent	2	Scott/Pisciotto

Co-Chief Tally by Country
Legs 101-146



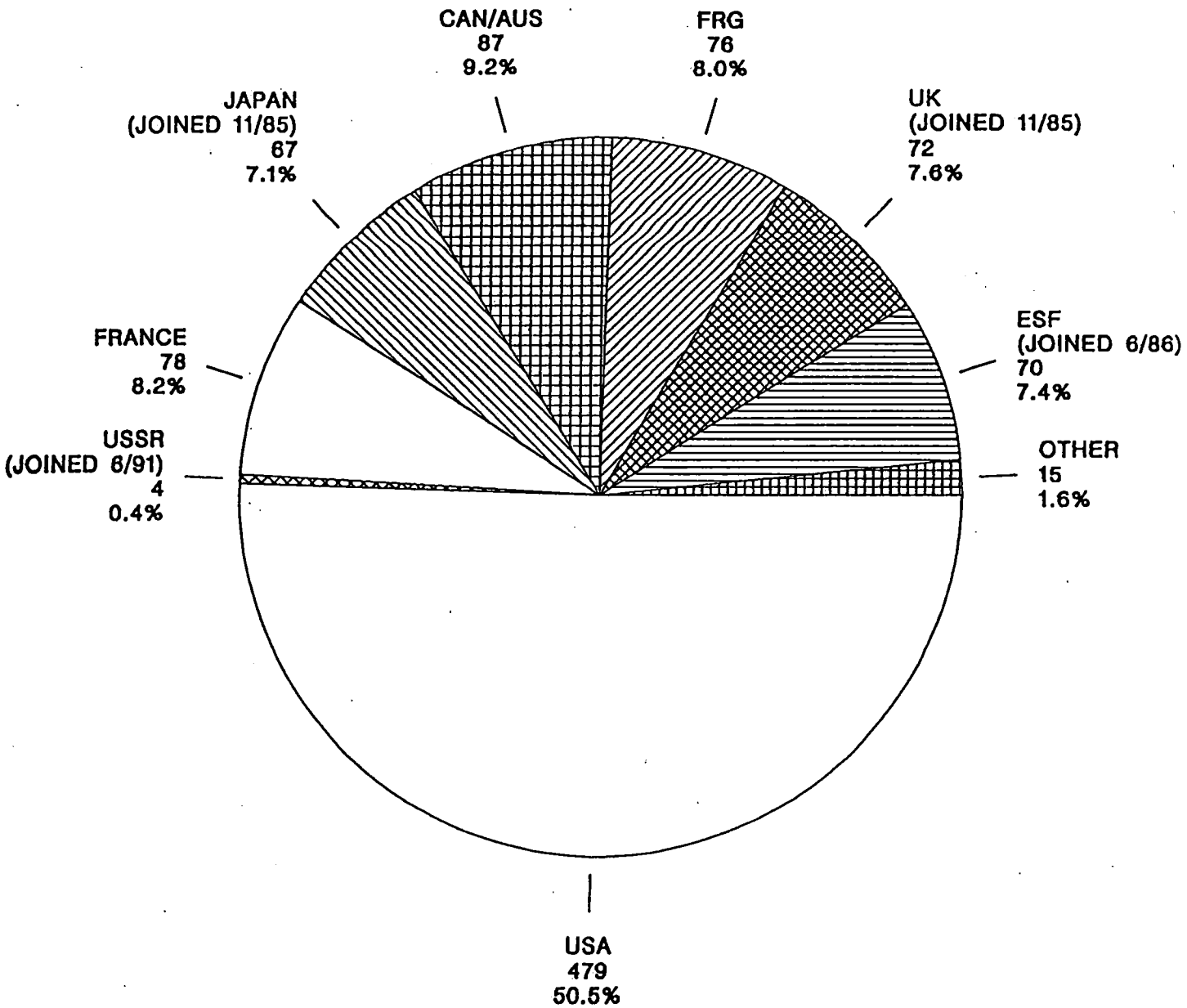
	End 1993 Expectation	Deficit
Japan - 6	8	2
UK - 6	8	2
ESF - 6	7-1/2	1-1/2
USSR - 1	2-1/2	1-1/2
USA - 48		
France - 8	9	1
FRG - 6	9	3
Can/Aus - 8	9	1
		12

Total: 89

International Partners Total: 41

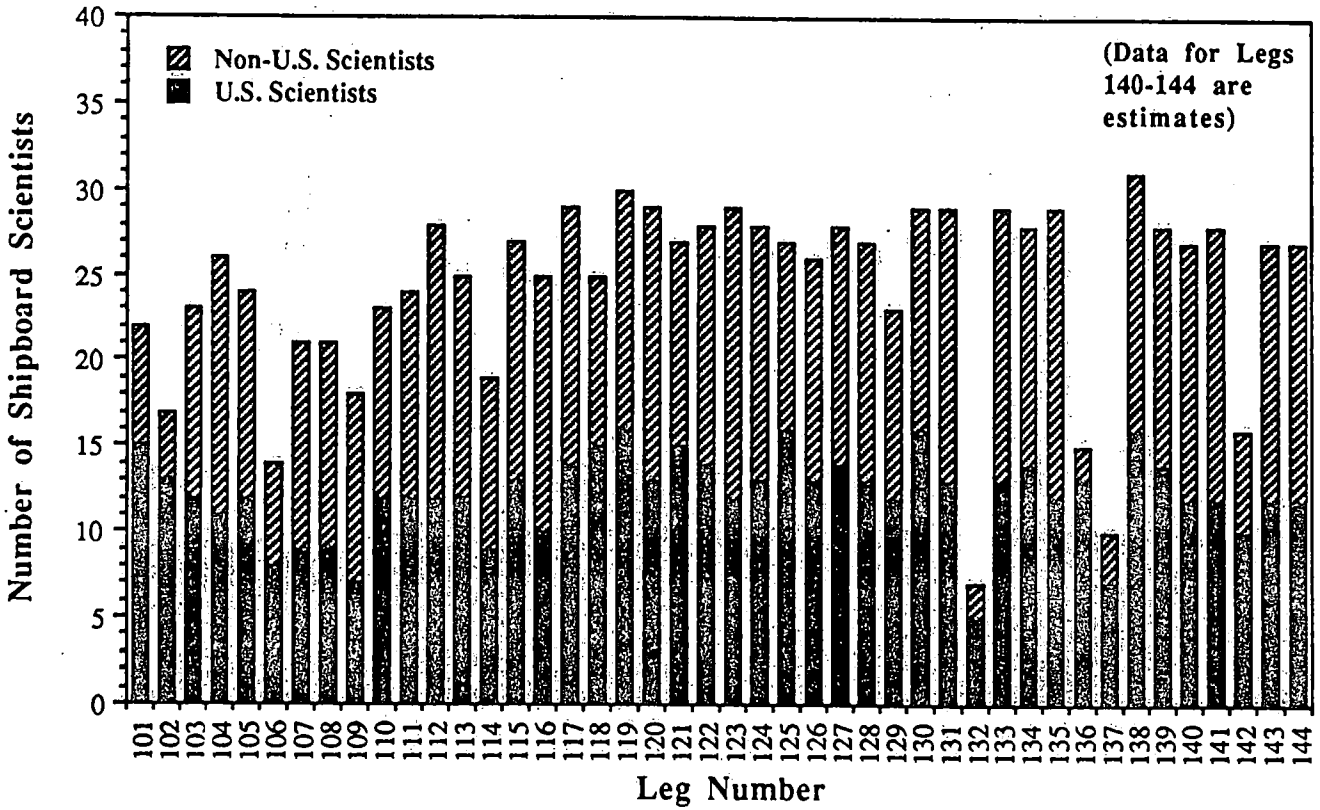
SHIPBOARD PARTICIPANT TALLY
LEGS 101 - 139

(January 1985 - September 1991)



TOTAL 948 PARTICIPANTS

TOTAL NUMBER OF SHIPBOARD SCIENTISTS PER LEG



	Leg #	U.S. Scientists	Non-U.S. Scientists	Total # Participants
1	101	15	7	22
2	102	13	4	17
3	103	12	11	23
4	104	11	15	26
5	105	12	12	24
6	106	8	6	14
7	107	9	12	21
8	108	9	12	21
9	109	7	11	18
10	110	12	11	23
11	111	12	12	24
12	112	12	16	28
13	113	12	13	25
14	114	9	10	19
15	115	13	14	27
16	116	10	15	25
17	117	14	15	29
18	118	15	10	25
19	119	16	14	30
20	120	13	16	29
21	121	15	12	27
22	122	14	14	28
23	123	12	17	29
24	124	13	15	28
25	125	16	11	27
26	126	13	13	26
27	127	14	14	28
28	128	13	14	27
29	129	12	11	23
30	130	16	13	29
31	131	13	16	29
32	132	5	2	7
33	133	13	16	29
34	134	14	14	28
35	135	12	17	29
36	136	13	2	15
37	137	7	3	10
38	138	16	15	31
39	139	14	14	28
40	140	12	15	27
41	141	12	16	28
42	142	10	6	16
43	143	12	15	27
44	144	12	15	27

STAFF CHANGES AT ODP-TAMU

AFF SCIENTISTS

MARTA VON BREYMANN - LEFT MAY '91 FOR GEOMAR, KIEL

ROBERT MUSGRAVE - JOINS SEPTEMBER '91 FROM UNIVERSITY OF TASMANIA

- PhD, UNIVERSITY OF SYDNEY, 1987 "PALEOMAGNETISM AND TECTONICS OF THE EASTERN SOLOMON ISLANDS"
- PALEOMAGNETIST ON LEG 130, ONTONG JAVA PLATEAU

DEVELOPMENT ENGINEERS

STEVE HOWARD, SENIOR DEVELOPMENT ENGINEER - LEFT MAY '91FOR ENSCO, LOUISIANA

BILL RHINEHART, DEVELOPMENT ENGINEER - JOINED JUNE '91 FROM STAR ENTERPRISES (TEXACO/ARAMCO)

- BS, TEXAS A&M, MECHANICAL ENGINEERING, 1985
- ODP ENGINEERING GRADUATE ASSISTANT, WORKING ON MS, 1989

SCOTT McGRATH, DEVELOPMENT ENGINEER - JOINED JULY '91 FROM SCHLUMBERGER WELL SERVICES

- BS, UNIVERSITY OF PITTSBURGH, MINING ENGINEERING, 1983
- SCHLUMBERGER LOGGER LEG 115, MASCARENE PLATEAU

SEAGOING TECHNICAL SUPPORT

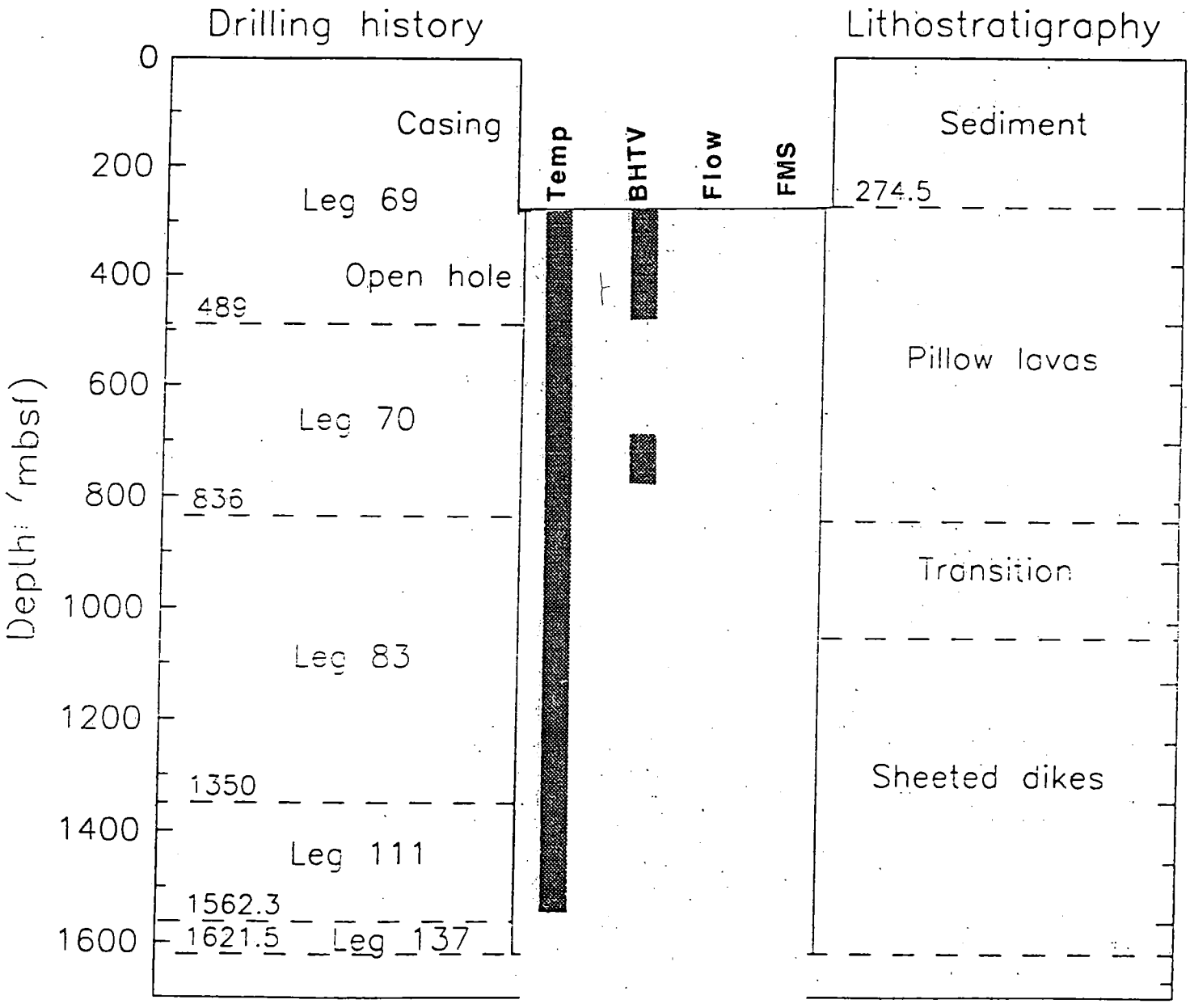
JANUARY-JULY 1991

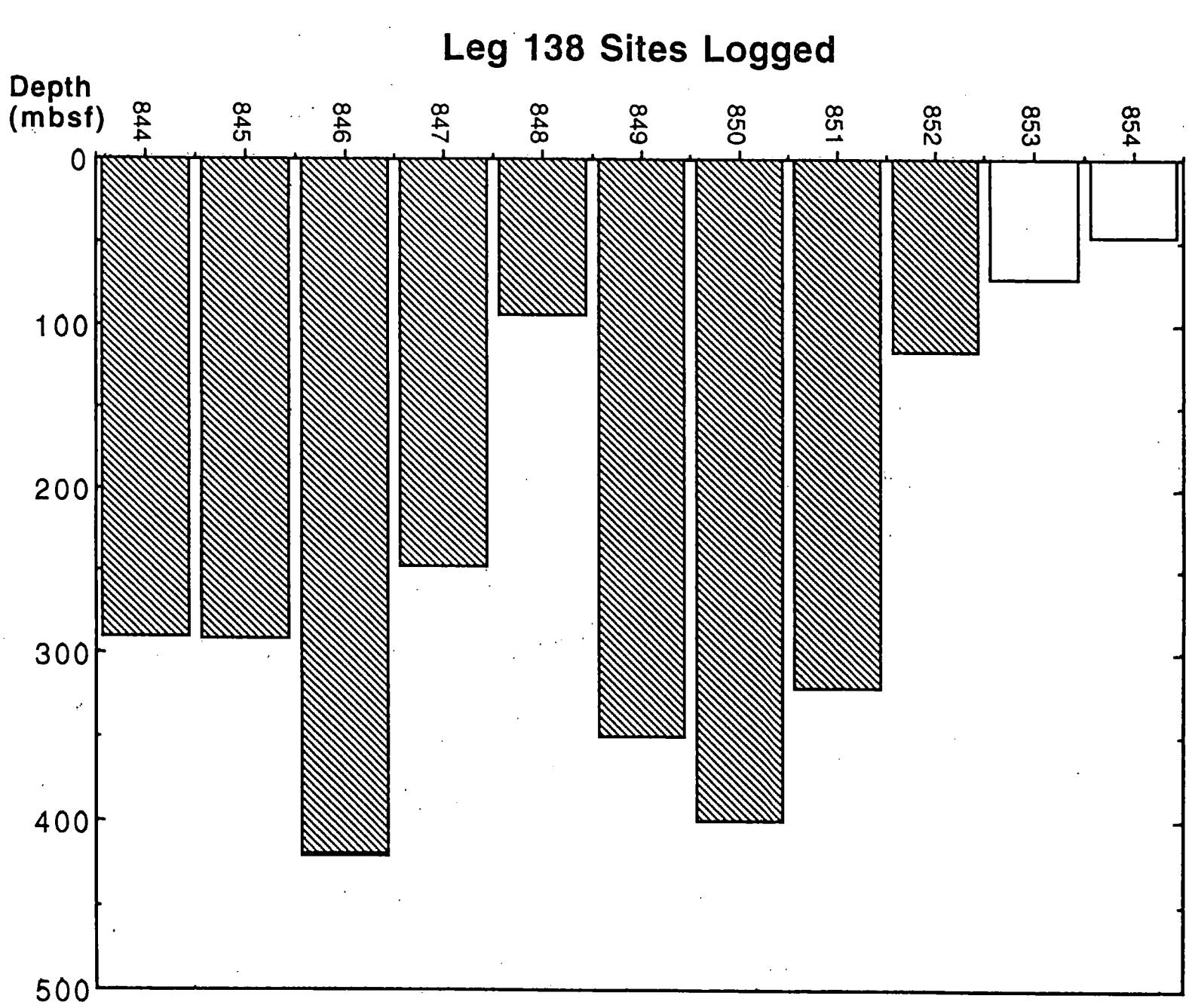
4 TECHNICAL SUPPORT STAFF LEFT

3 TRANSFERRED TO SHORE-BASED ODP POSTS

8 NEW SEAGOING STAFF RECRUITED

Leg 137 Logs


Drilling history
Lithostratigraphy
Depth (mbsf)
0
200
400
600
800
1000
1200
1400
1600
Casing
Leg 69
Open hole
489
Leg 70
836
Leg 83
1350
Leg 111
1562.3
1621.5
Leg 137
Temp
BHTV
Flow
FMS
Sediment
274.5
Pillow lavas
Transition
Sheeted dikes


Leg 138 Sites Logged
Depth
(mbsf)
0
100
200
300
400
500
844
845
846
847
848
849
850
851
852
853
854

Downhole Measurements
Potential Technology Enhancements

		TECP	LITH	OHP	SGPP	SMP	DMP	
High-T Resistivity ($290K total, have $140K)	$150K		X		X		1	
Fluid Sampling	$350K		X		X		2	
MAXIS (next-generation data acquisition/analysis)	$150K						3	
Sediment susceptibility	$260K			X		X	4	
Next-generation geochemistry	$125K				X		5	

EXCOM Motion, July, 1991, Scripps Institution of Oceanography [unanimous]

EXCOM reconfirms the following motion and consensus from its October 1990 meeting:

"EXCOM commends PCOM for its development of the program and encourages PCOM to pay special attention to truly major scientific issues that would bring the program greater visibility in the period prior to renewal. In particular EXCOM urges that no opportunity be missed within the Program Plan to drill through the lower crust and upper mantle." [MOTION]

"EXCOM urges PCOM to develop strategies for implementation of the Long Range Plan with particular attention to identifying themes for special emphasis in the mid-90's." [CONSENSUS]

000014 SGPP — June, 1991 "Atlantic" ranking **APPENDIX 6**

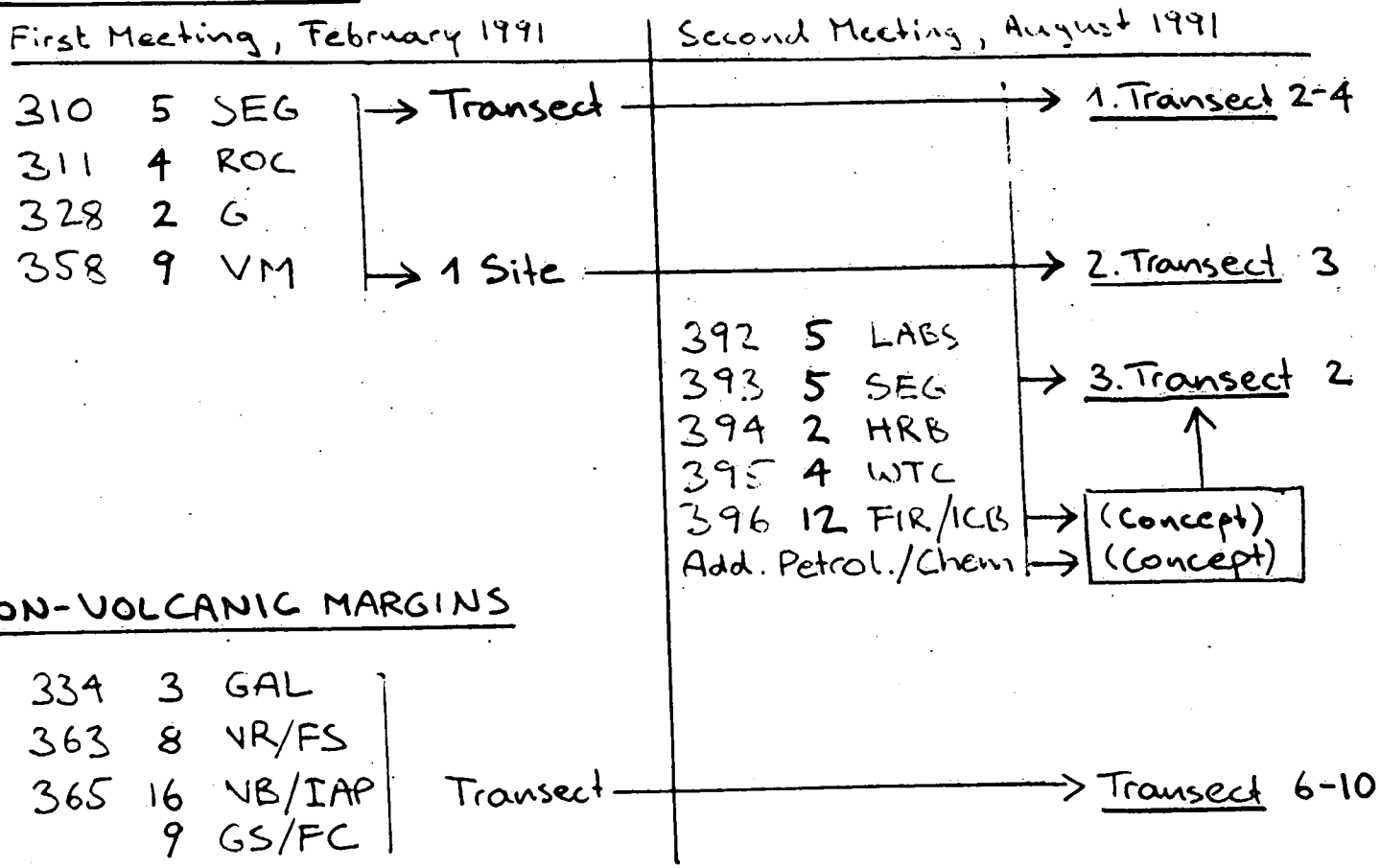
Global Ranking of Proposals by Thematic Panels, April 1991

Subdivision at ranks 5, 10 and 15 correlates with categories 3, 2, 1 and 0 on histograms of global map.

Rank	LITHP	OHP	SGPP	TECP	Map histo-grams
1	387-Rev Hess Deep	NAAG-DPG N Atl./Arctic gateways	355-Rev2 Gas hydrate	NARM-DPG N Atl. rifted margins	
2	361---- TAG hydro.	348---- New Jersey sea level	391---- Med. sapropels	323-Rev Alboran Basin/gateway 330---- Med. Ridge	
3	EPR-DPG East Pacific Rise II	339---- Benguela Current 354---- SE Atl. upwelling	SR-DPG Sedimented Ridges II	362-Rev2 Chile Triple Junction II	3
4	NARM-DPG N Atl. rifted margins (volcanic: 392-396)	388---- Ceara Rise	348---- New Jersey sea level	346-Rev Eq. Atl. transform	
5	SR-DPG Sedimented Ridges II	253---- Shatsky R. black shales	380-Rev VICAP Gran Canaria	GENERIC Hess Deep II (tectonic)	
6	376---- Vema FZ: layer 2/3 382---- Vema FZ: deep crust	347---- South-eq. Atl. paleo.	233-Rev3 Oregon acc. complex	343---- Caribbean crust	
7	369---- MARK deep mantle	Bering Sea (Pac. Prosp.) Bering Sea history 390---- Shirshov Ridge	354---- SE Atl. upwelling	265---- Woodlark Basin	2
8	NARM-DPG N Atl. rifted margins (non-volc.: 334, 365)	386-Rev California margin	059-Rev2 Sediment instability	378-Rev Barbados acc. wedge	
9	325---- Endeavour Ridge	345---- West Florida sea level	EPR-DPG East Pacific Rise II	334-Rev Galicia margin	
10	142-Rev Ontong Java Plateau	NARM-DPG N Atl. rifted margins	337---- New Zealand sea level	363---- GB-Iberia plume volc.	
11	368---- Hole 801C Return	296-Rev Ross Sea	360---- Valu Fa hydro.	GENERIC Slow offset drilling	
12	300---- 735B: layer 3/mantle	313---- Eq. Atl. pathways	388---- Ceara Rise	340---- N Australian margin	
13	374---- Oceanographer FZ		368---- Hole 801C Return	GENERIC Red Sea, Gulf of Aden	1
14	362-Rev2 Chile Triple Junction II		361---- TAG hydro.	Cascadia-DPG Cascadia Margin II	
15	252---- Loihi Seamount		340---- N Australian margin	379---- Med. drilling (Tyr. Sea)	
16	290---- Juan de Fuca axial smt.		330---- Med. Ridge	392---- Labrador Sea volc.	
17	379---- Med. drilling		378-Rev Barbados acc. wedge	333---- Cayman Trough	
18	323-Rev Alboran Basin/gateway		367---- S Australia margin	373---- Site 505 Return	0
19	373---- Site 505 Return		275-Rev Gulf of California	327---- Argentine cont. rise	
20	360---- Valu Fa hydro.		372---- N Atl. paleo.	367---- S Australia margin	
Plus	280-Rev; 331; 267; 319-Rev; 291; 360, 352; 333, 313				

INPUT/OUTPUT AT TWO NARM-DPG MEETINGS

VOLCANIC MARGINS



NON-VOLCANIC MARGINS

APPENDIX 7

TRANSECT STRATEGY AND SITE OBJECTIVES VOLCANIC MARGINS

General: Age, structure and geochemical signature/variability of volcanic seaward-dipping sequences.

1. EAST GREENLAND MARGIN AT ~ 63°N

- Best steady-state pattern of SDRs
- Smooth topography
- Good data base
- Reasonable distance from Iceland

EG63-1: • Oldest volcanic deposits
• Test for chem. contamination from bsmt.
• Deformation of dykes → flexure

EG63-2: • Central part of SDR sequence
• Is plume signal still present?
• Emplacement mode, flow thickness
• Flexural strength

EG63-3/4: • Outer or inner-central volcanic sequence, depending on results from EG63-1/2

2. VØRING MARGIN

- Timing of transient volc. pulse relative to other timi

VM-3: • Outer SDR sequence; complementing Site 69
VM-5: • Less developed, younger SDR sequence
VM-6: • Oceanic crustal "reference" hole

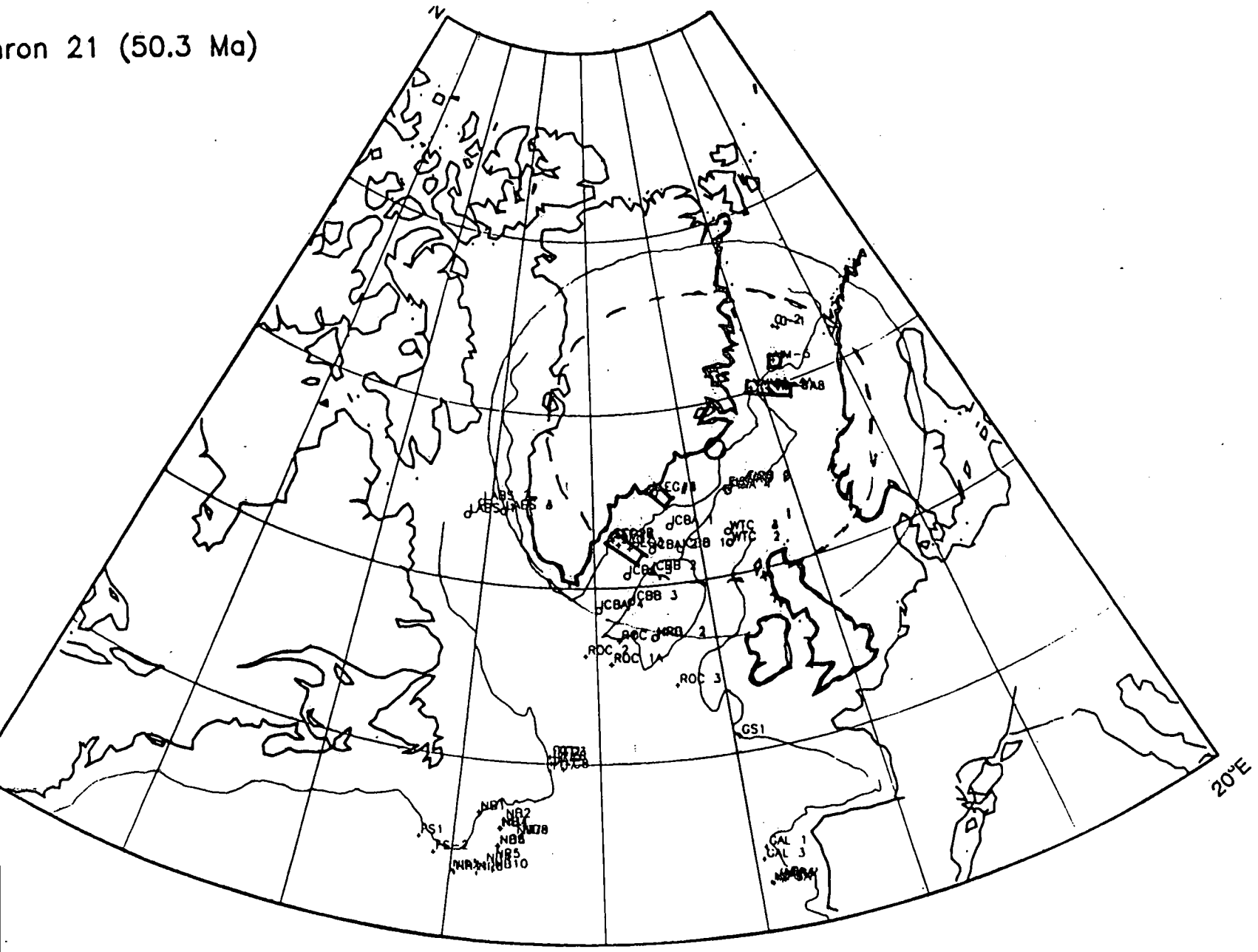
3. EAST GREENLAND MARGIN AT ~66°N

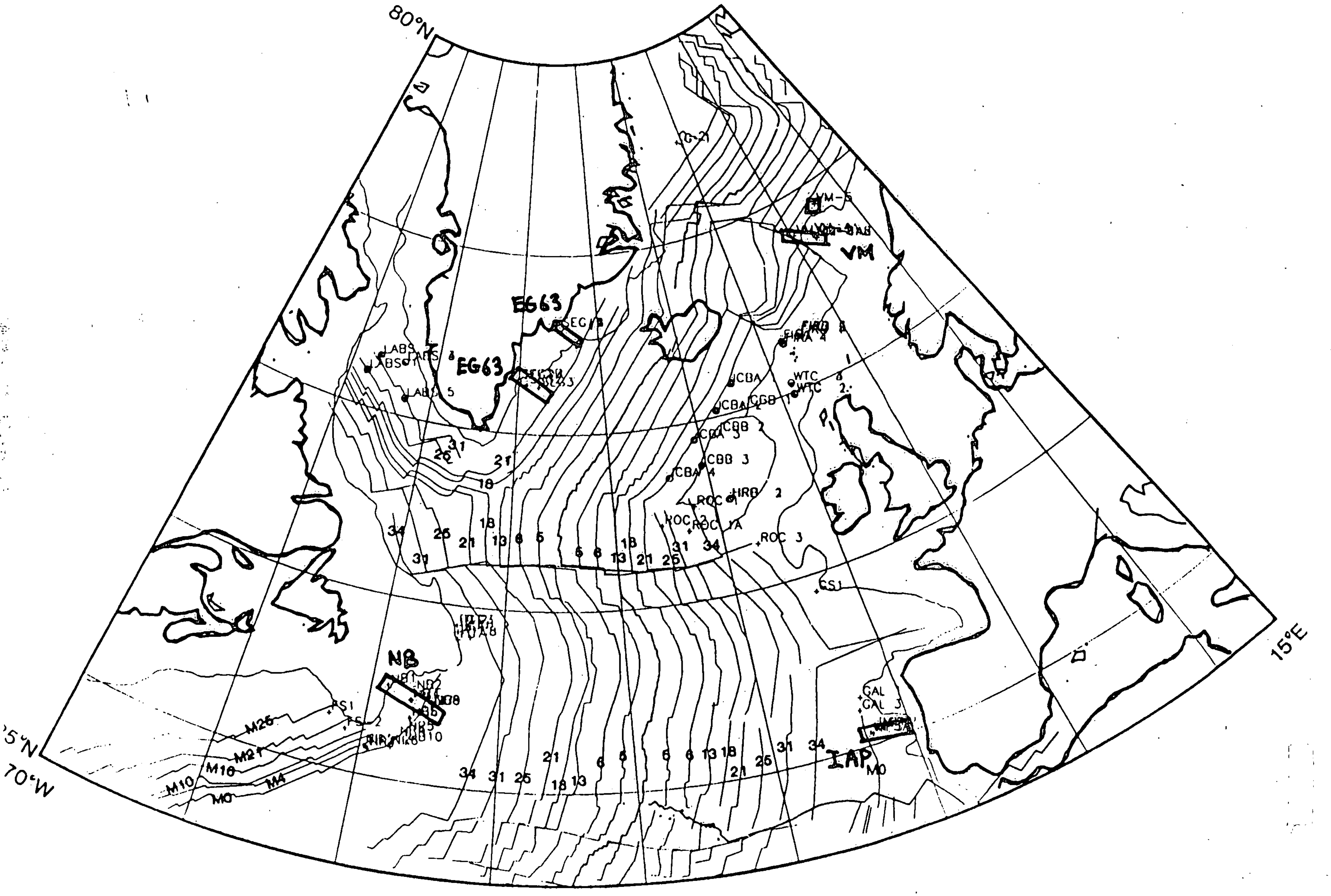
- Chemical variations along "radial plume transect" or "longitudinal" control

EG66-1:
- Longitud. variations rel. to EG63-1
- Reference well to onshore basalts

EG66-2:
- Younger wedge, representing chron 23-22 magmatic episode with thermal shrinking effect
- Does it relate to VM-5 ?

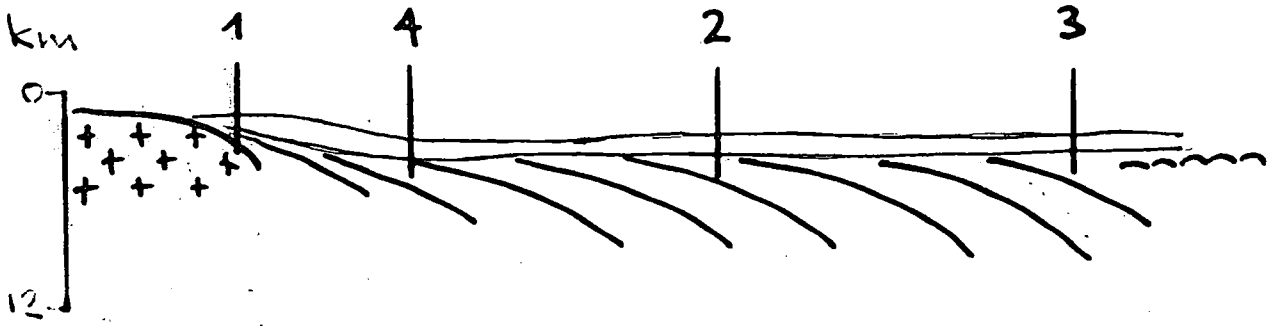
aron 21 (50.3 Ma)

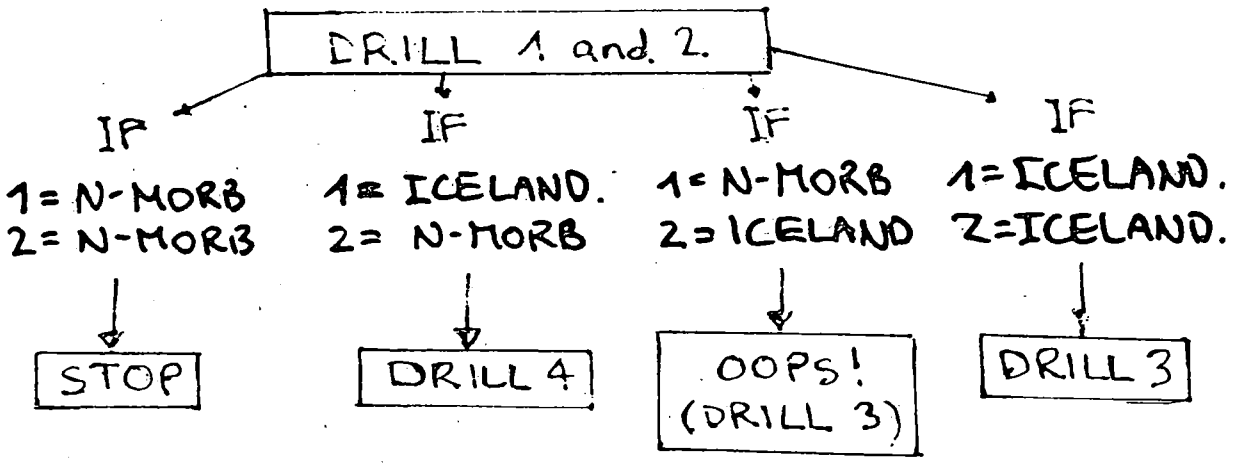




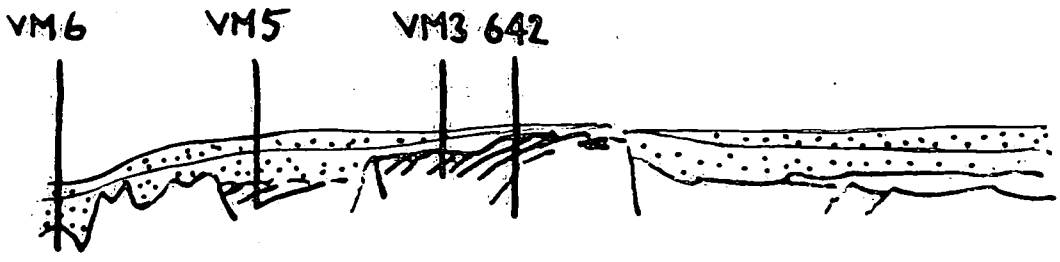
80°N
75°N
70°W
15°E
EG63
EG63
VM
NB
IAP
M0
LABS
LABS
LABS 5
WTC
WTC 2
CBA
CBB
CBB 3
CBA 4
HRB 2
ROC 2
ROC 3
FS1
GAL
GAL 3
PS1
M25
M21
M16
M10
M4
M0
34
31
25
21
18
13
8
5

TESTING COMPOSITIONAL RESPONSE TO THERMAL PULSE
EAST GREENLAND MARGIN TRANSECT AT 63°N





VØRING MARGIN TRANSECT

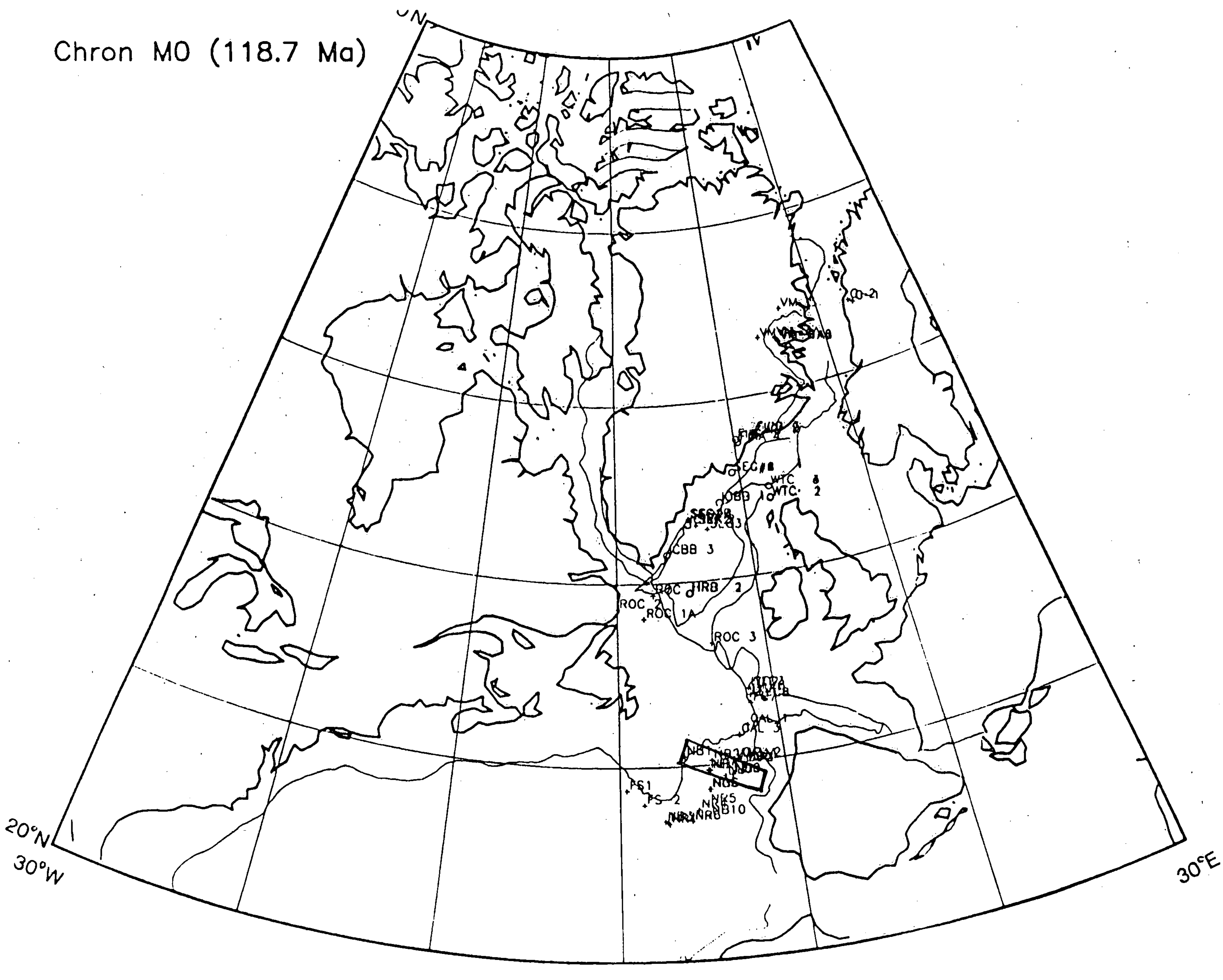


VOLCANIC MARGINS DRILLING PLAN

Priority	Site	Days on Site	Water	Sed.	Bsmt.	Total
1.1.	EG63-1	20.4	520	440	500	940
1.2.	EG63-2	47.7	1875	1220	500	1720
2.1.	VM-3	22.6	1370	970	300	1270
2.2.	VM-5	17.1	3180	470	400	870
2.3.	VM-6	9.1	3370	600	100	700
3.	EG63-3	23.6	2095	1420	50	1470
or	EG63-4	23.9	1840	1180	100	1280
	*EG63-2	?	875	—	?	
4.	EG66-1	16.4	280	210	500	510
	EG66-2	16.7	1565	620	100	720

* Deepening, if required

Chron M0 (118.7 Ma)



TRANSECT STRATEGY AND SITE OBJECTIVES
NON-VOLCANIC MARGINS

General:
- Location of ocean-continent transition (substantiate geophys. criteria for OCT
- Is predicted peridotite ridge present?
  → thermal-mech. condition of lithosphere stretching
- Age and subsidence history of sediments (syn-rift sed. on lower plate, break-up unconformity)
- Nature and composition of bsmt. blocks cont.? oceanic? petrological alteration?

1. IBERIA ABYSSAL PLAIN TRANSECT

IAP-1:
- Date break-up, most complete sed. sequence
- Syn/post-rift subsidence of W-most block

IAP-2:
- Cont. basement and pre-rift sed.
- Evidence (struct./petr./chem.) for crustal stretch

IAP-3:
- Oldest oceanic crust; onset of s.f. spreadin

IAP-4:
- Verification of serpentinised peridotite ridge

IAP-5:
- Cont. basement and pre-rift sed.
- Evidence (struct./petr./chem.) for crustal stretch.

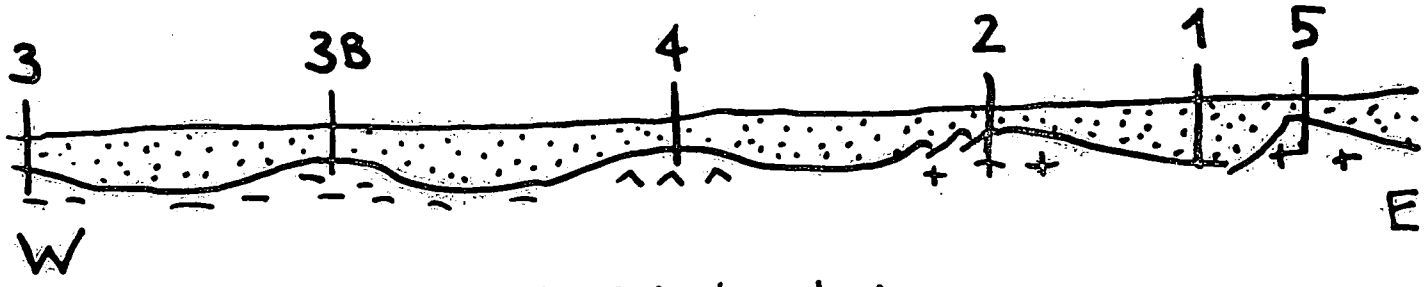
2. NORTHERN NEWFOUNDLAND BASIN TRANSECT

NB-1:
- Age/duration of rifting phase(s)
- Subsidence history, stratigraphy

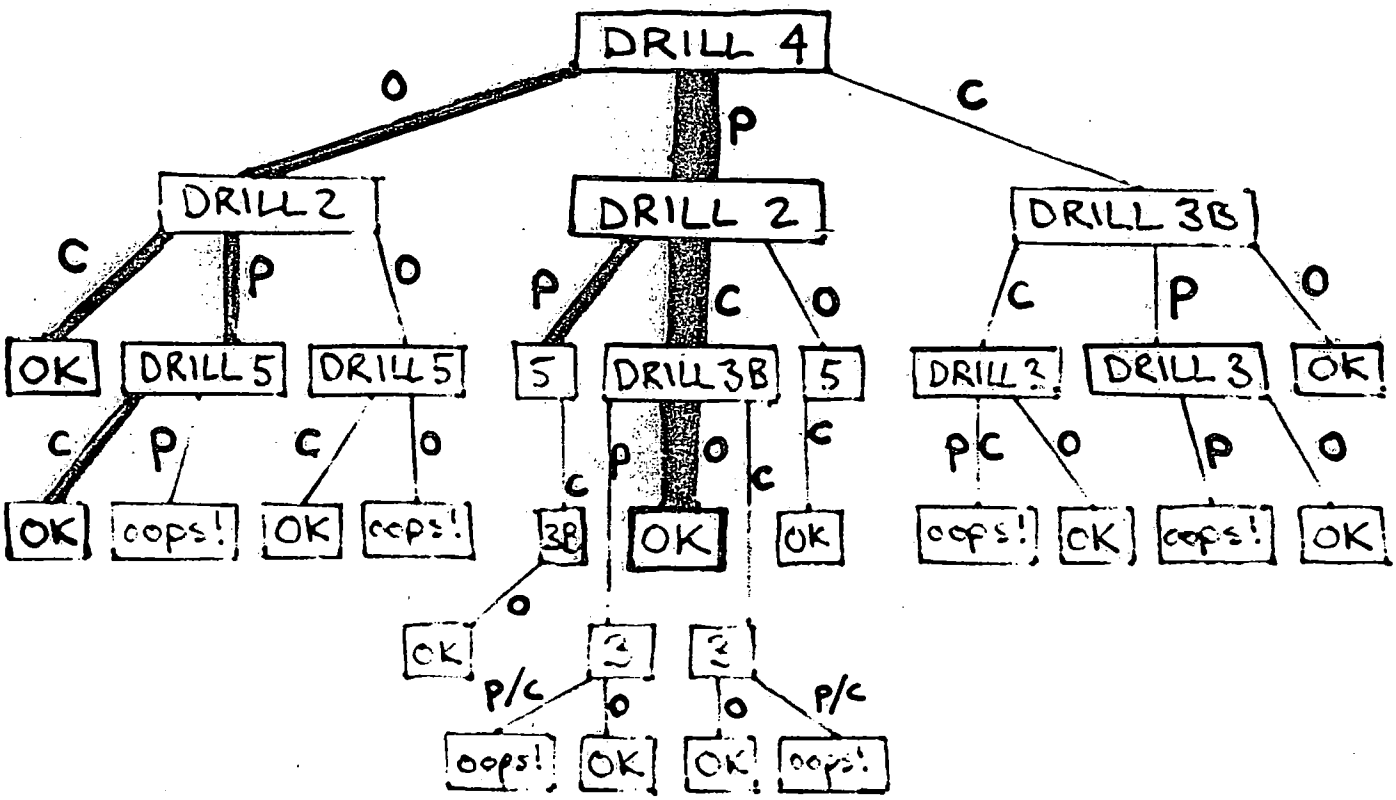
NB-4:
- U-unconformity; syn-rift sediments
- Subsidence history, stratigraphy

NB-7:
- Age, composition, geochem. signature, age/depth history of J-anomaly ridge

LOCATING OCEAN-CONT. TRANSITION
IBERIA ABYSSAL PLAIN



OK: OCT is located



NON-VOLCANIC MARGINS DRILLING PLAN

Priority	Site	Days on Site	water	Sed.	Bsmt.	Total
1.	IAP-4A	14.5	5400	682	100	782
	IAP-2A	18.9	5200	900	100	1000
	IAP-3B	18.9	5500	850	100	950
	* IAP-3	25.3	5500	1120	100	1220
	* IAP-5	20.2	5200	1000	100	1100
2.	NB-4A					
3.	IAP-1	58.6	5200			2500
4.	NB-7A	36.3	4200	1600	100	1700
	NB-1					
	GAL-1					

* Only if COT not defined by first three wells

GLOBAL OFFSET CRUSTAL DRILLING (1993-2000)

	FAST	SLOW	
2/3 TRANSITION	1	1	
LONG GABBRO X^N	1	1	
3/M TRANSITION	2	2	(HIGHEST THEMATIC PRIORITY)
UPPER MANTLE X^N	1	1	
MEDIAN VALLEY "MASTER FAULT"	1		
TRANSFORM FAULT (1000 ± 500 m/leg)	1		
	12 LEGS		

GLOBAL PRIORITY REGIONS

FAST : HESS DEEP (LONG GABBRO, 3/M?)

MARK (U. MANTLE, L. GABBRO, M. FAULT)

VEMA (2/3, L. GABBRO, 3/M? + TRANSVERSE RIDGE TECTONICS)

AII/735B (LONG GABBRO, 3/M?)

4 REGIONS READY FOR 1ST STAGE DRILLING

(DETERMINING DRILLING PERFORMANCE VS. ROCK TYPES + ENVIRONMENT

SEVERAL VARIATIONS ON LINE FOR "SLOW" CRUS
(15°20', KING's TROUGH)

"FAST" CRUST ALTERNATES NEEDED
(PITO DEEP, ENDEAVOR TROUGH)

NO REGION SUFFICIENTLY SURVEYED FOR 4 LEG "TOTAL SECTION"

NO DRILLABLE PTDZ IDENTIFIED

ENGINEERING IMPLICATIONS

- DCS FOR 2-3 TRANSITION
- SLIM LOGGING TOOLS
- GUIDE BASES FOR 35° SLOPES
- DRILL-IN CASING

ENHANCED SITE SURVEY REQUIREMENTS

→ OUTCROP SCALE GEOLOGIC MAP

LITHP

1990				1991	
1	387	Hess Deep	Legs 140/147	1	0
2	EPR	East Pacific Rise	Legs 142/147	3	-1
3	369	MARK deep mantle		7	-4
4	361	TAG hydro.		2	+2
5	SR	Sedimented Ridges	Leg 139	5	0
6	376	Vema FZ: crust/mantle		6	0
7	376	Vema FZ: layer 2/3		6	(+1)
8	377	OSN test site, Oahu	Leg 136		—
9	267	Argo Abyssal P./W Pac.		23	-14
10	368	Hole 801C return		11	-1

OHP

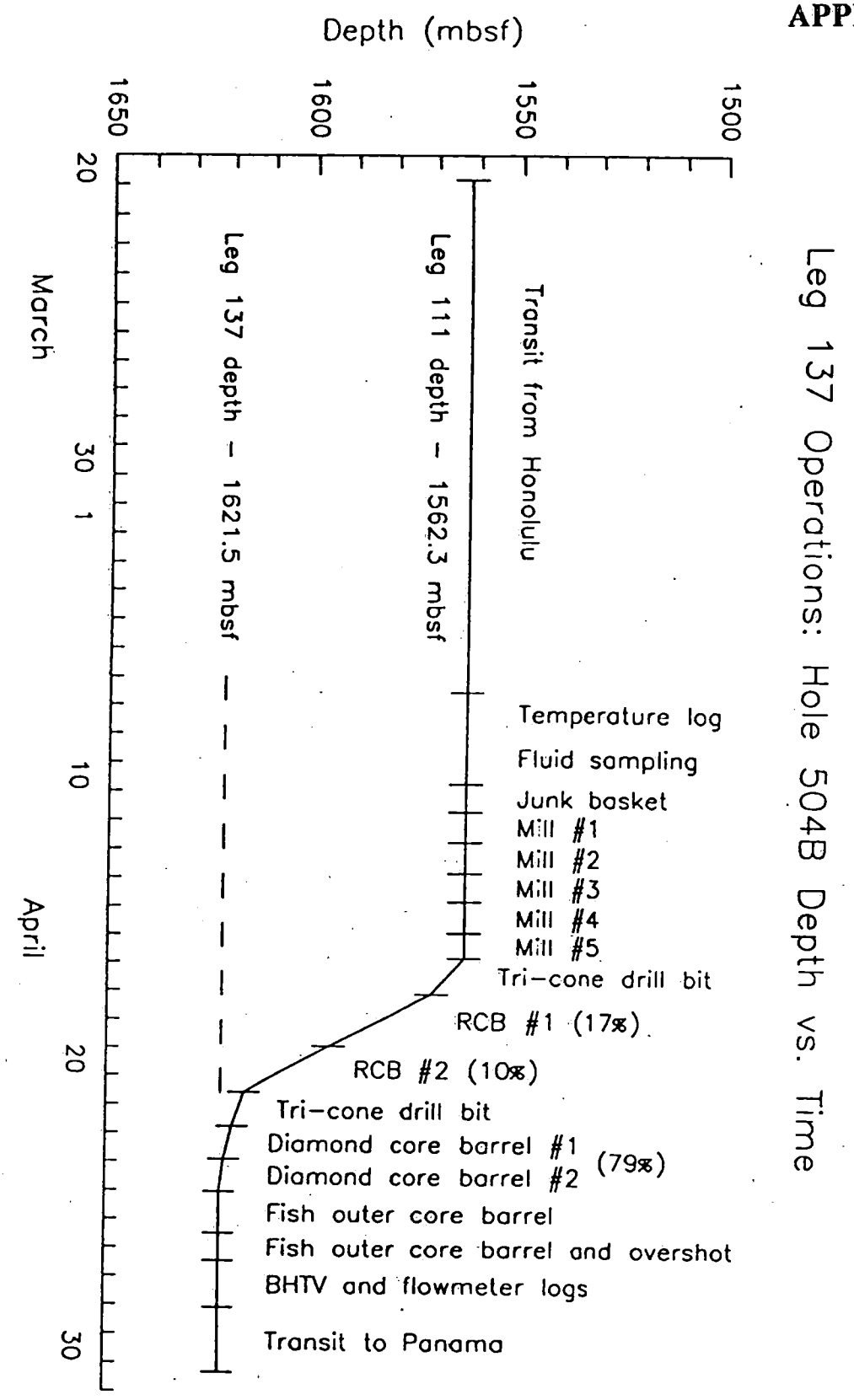
1990				1991	
1	"NAAG"	"N-most Atlantic"		1	0
2	"NPT"	"North Pacific"	Leg 145	—	—
3	348	New Jersey sea level		2	+1
4	203	Central Pacific guyots	Legs 143/144	—	—
5	"Bering"	"Bering Sea history"		7	-2
6	202	Marshall Is. atolls	Legs 143/144	—	—
7	347	South-eq. Atl. paleo.		6	+1
8	271	California Current		8	0
9		"SW Pac. sea level"		—	out
10	253	Pac. black shales		5	+5

SGPP

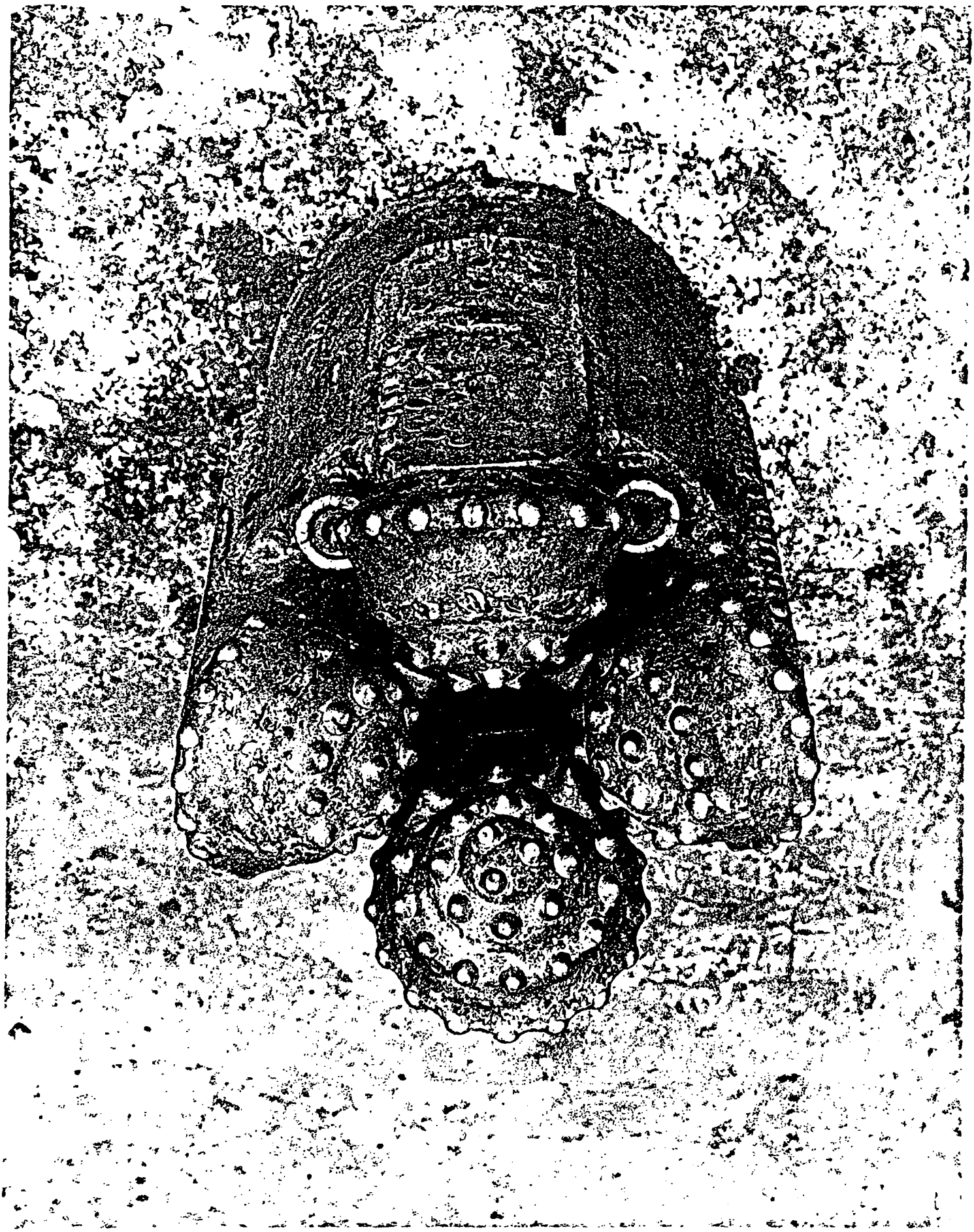
1990				1991	
1	Casc.	Cascadia margin	Leg 146	6	re/-5
2	362	Chile Triple Junction	Leg 141	—	—
3	"A&G"	"Atolls and Guyots"	Legs 143/144	—	—
4	SR	Sedimented Ridges	Leg 139	3	re/+1
5	348	New Jersey sea level		4	+1
6	355	Gas hydrate		1	+5
7	EPR	East Pacific Rise	Legs 142/147	9	re/-2
8	275	Gulf of California		19	-11
9	337	New Zealand sea level		10	-1
10	378	Barbados acc. prism		17	-7

TECP

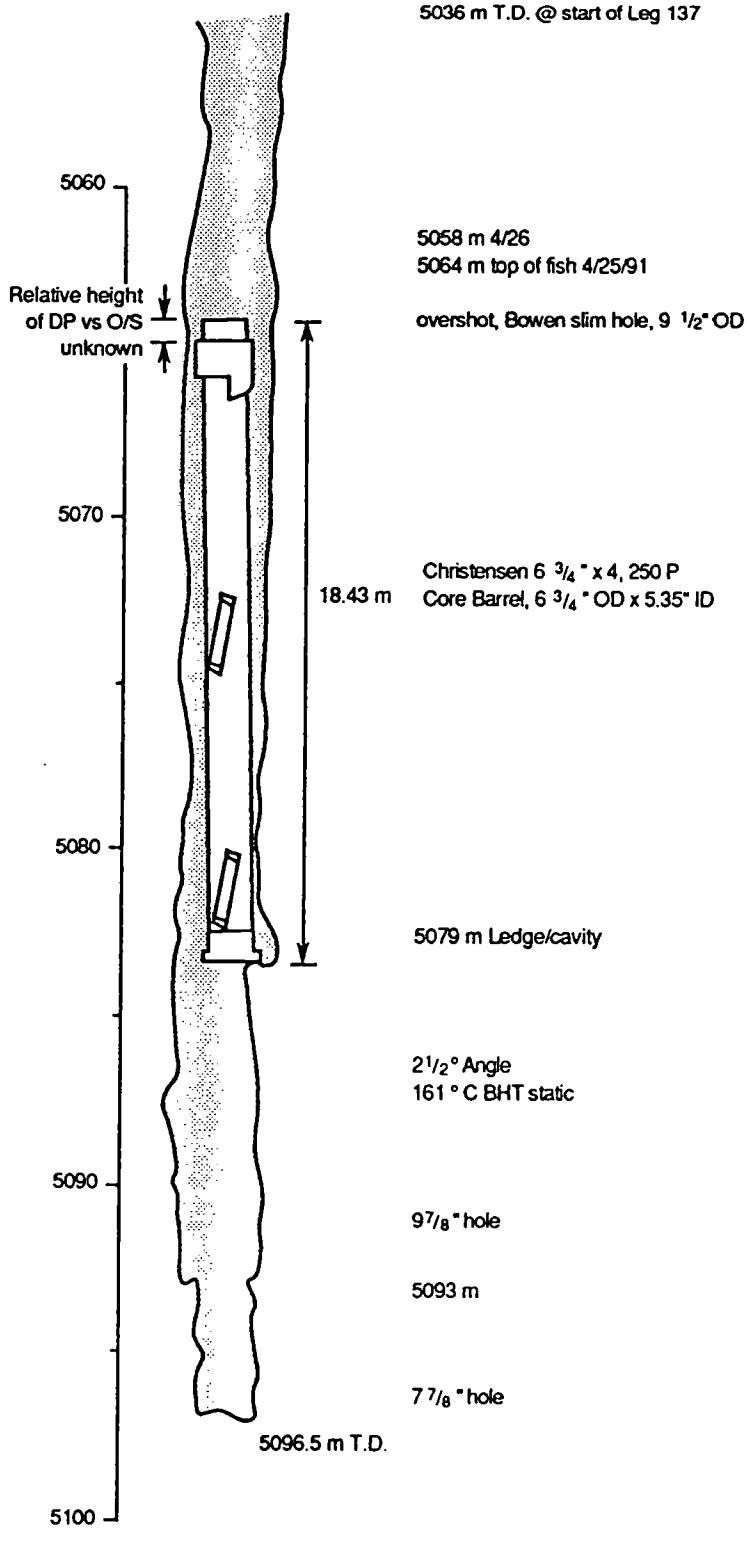
1990				1991	
1	362	Chile Triple Junction	Leg 141	–	–
2	"NARM"	"Non-volc. NARM"		1	+1
3	Casc.	Cascadia margin	Leg 146	–	–
4	377	OSN test site, Oahu	Leg 136	–	–
5	"NARM"	"Volcanic NARM"		1	+4
6	378	Barbados acc. prism		8	-2
7	346	Eq. Atl. transform		4	+3
8	340	N Australian margin		12	-4
9	"Antac."	"Antarctic" (297, 357)		–	out
10	333	Cayman Trough		17	-7

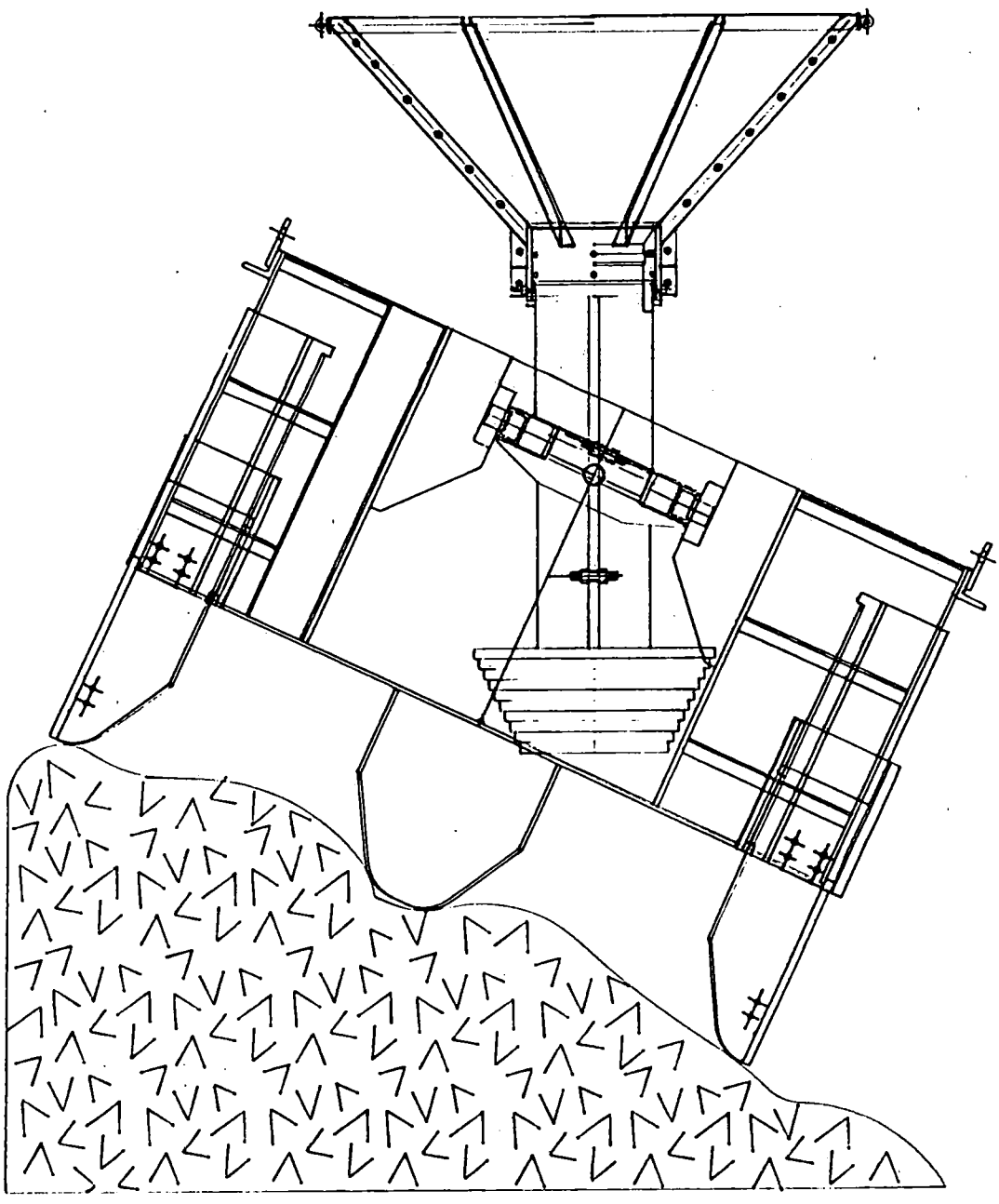


Summary of Leg 137 operations, showing depth of Hole 504B vs. time during the leg.

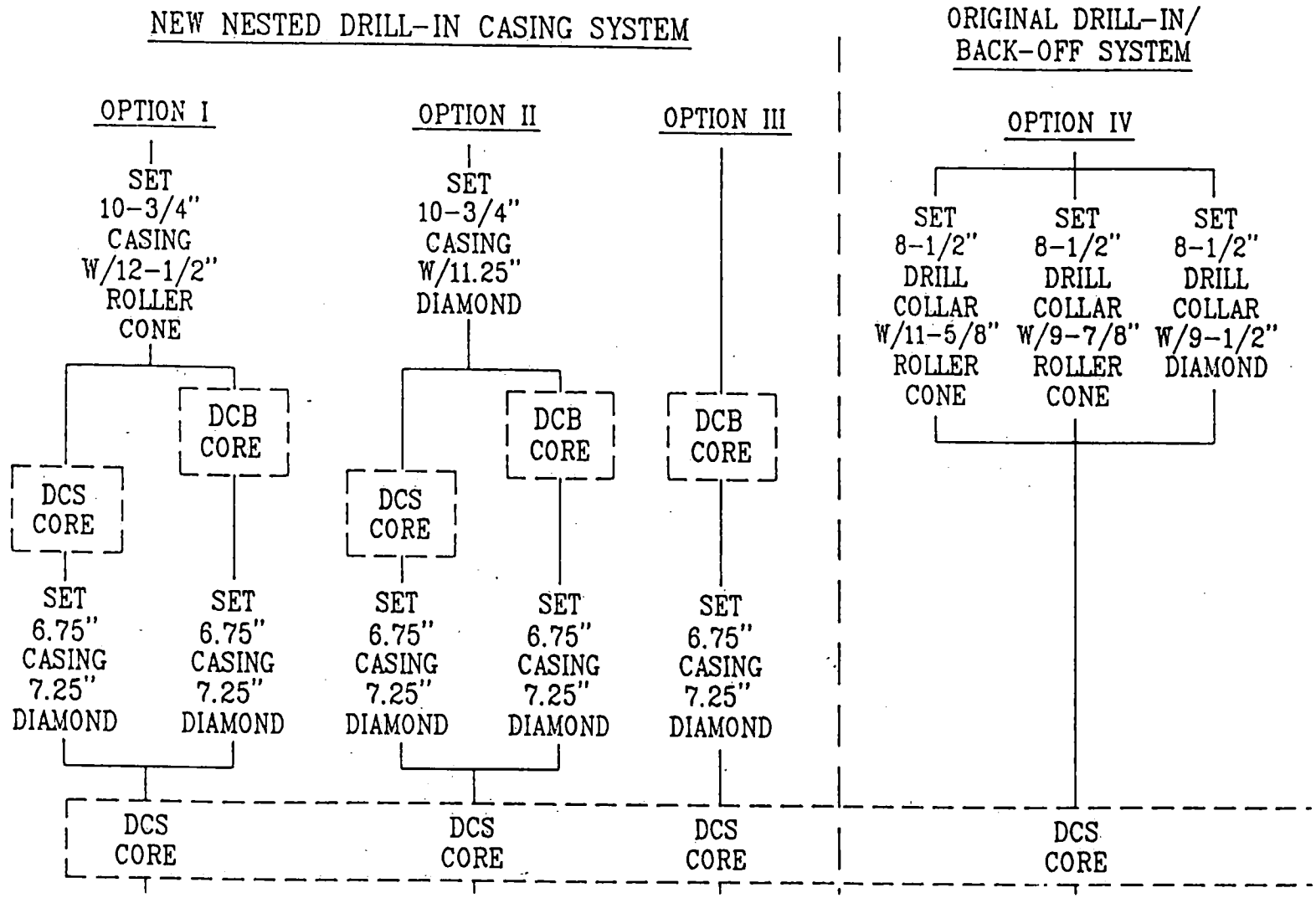


Hole 504D
End of Leg 137



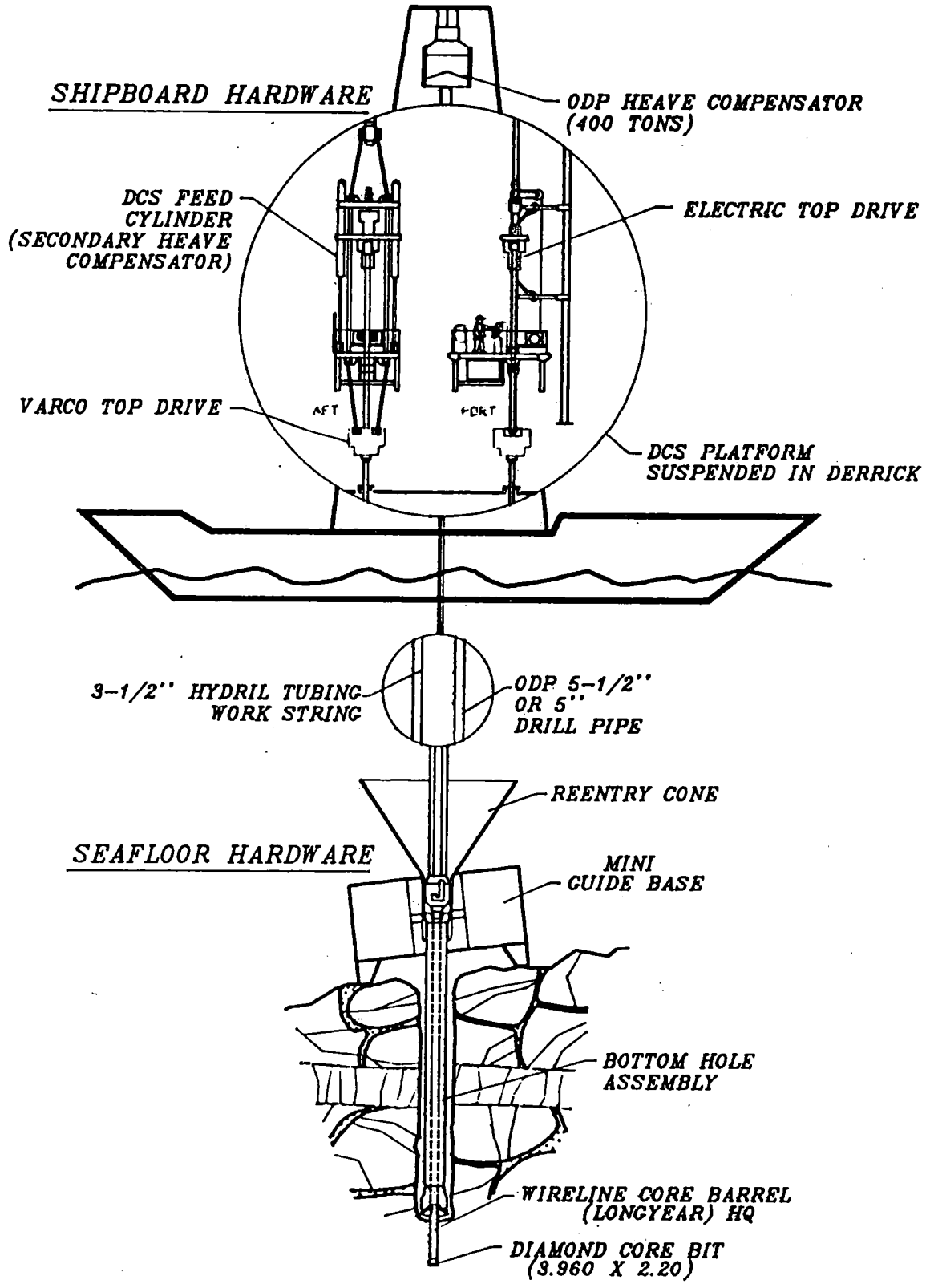


MINI HEX–BASE POSITIONED AT 25° MAXIMUM TILT



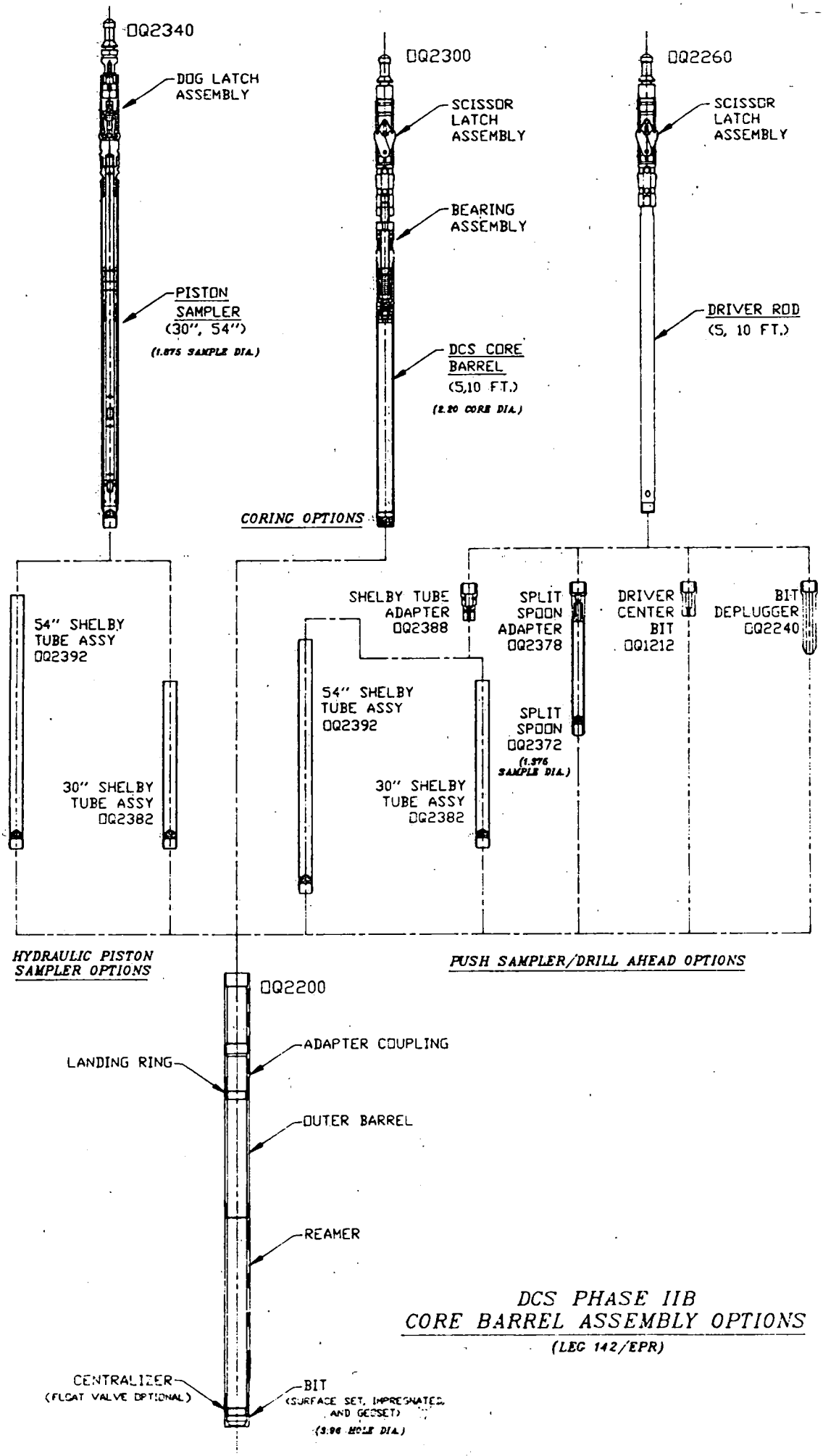
SEAFLOOR SPUDDING OPTIONS

FOR HARD ROCK LOCATIONS



DIAMOND CORING SYSTEM

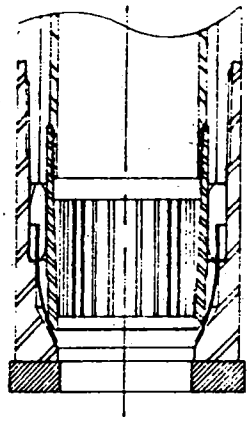
PHASE II – 4500 METER



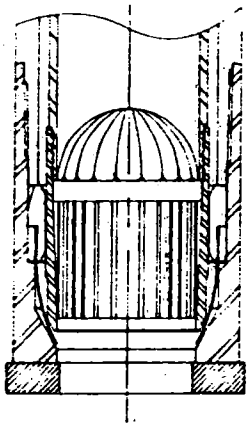
DCS PHASE IIB
CORE BARREL ASSEMBLY OPTIONS

(LEG 142/EPR)

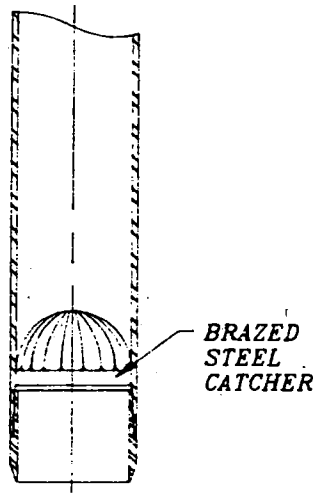
DCSCBBL



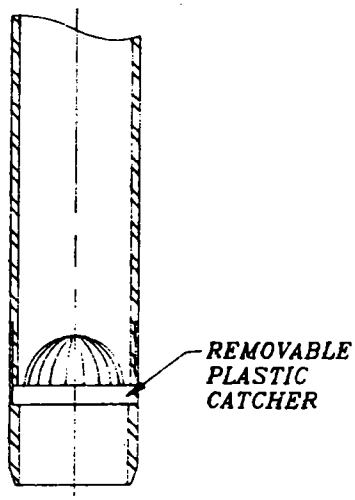
CORE BARREL
COLLET TYPE CATCHER



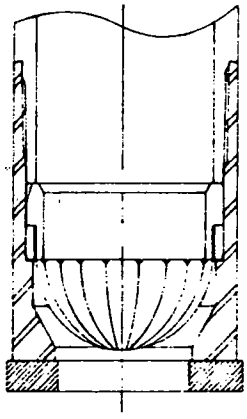
CORE BARREL
COLLET TYPE W/BASKET CATCHER



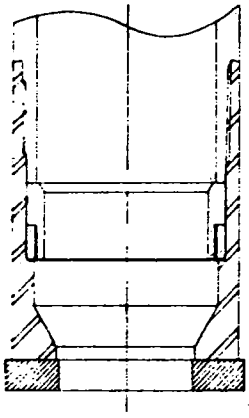
SHELBY TUBE
BASKET CATCHER



SPLIT SPOON
BASKET CATCHER



CORE BARREL
FLOAT VALVE



CORE BARREL
W/O FLOAT VALVE

DCS PHASE IIB

CORE CATCHER/FLOAT VALVE ASSEMBLY OPTIONS

(LEG 142/EPR)

DCSCORE

LEG 142 EAST PACIFIC RISE

ENGINEERING LEG

PRELIMINARY OPERATIONS PLAN

* DEPLOY MINI HARD ROCK GUIDE BASE AT EPR SITE ON PONDED LAVA LAKE LOCATED DURING PRE-SITE SURVEY.

* DEPLOY 1ST STAGE DRILL-IN-BHA 4-5 METERS INTO PONDED LAVA TO ANCHOR HRB.

* CONDUCT DIAMOND CORING OPERATIONS TO ACHIEVE MINIMUM 100 METER PENETRATION BELOW SEA FLOOR WITH MINIMUM 50 PERCENT RECOVERY. DETERMINE ACTUAL DEPTH OF RUBBLE ZONE ESTIMATED AT 40-60 MBSF.

  HOLE SIZE 3.96", CORE SIZE 2.20" X 10'

* DEPLOY SLIMHOLE TEMPERATURE/GAMMA RAY-CALIPER TOOLS FROM PLATFORM INTO 3.96" DCS HOLE.

* ATTEMPT TO REAM 3.96" DCS HOLE OUT TO 7.25" HOLE THROUGH RUBBLIZED ZONE.

* IF HOLE CONDITIONS ARE STABLE ENOUGH DEPLOY STANDARD TEMPERATURE/CALIPER LOGGING TOOLS.

* DEPLOY 2ND STAGE DI-BHA TO ISOLATE RUBBLE ZONE.

* IF TIME AVAILABLE AND HOLE TEMPERATURE PERMITS THEN RESUME DCS CORING OPERATIONS TO MAX DEPTH POSSIBLE. OTHERWISE DEPLOY SECOND HRB AND EVALUATE DIAMOND CORE BARREL (DCB) PERFORMANCE.

  HOLE SIZE 7.25", CORE SIZE 2.31" X 30.0'

OCEAN SEISMIC NETWORK

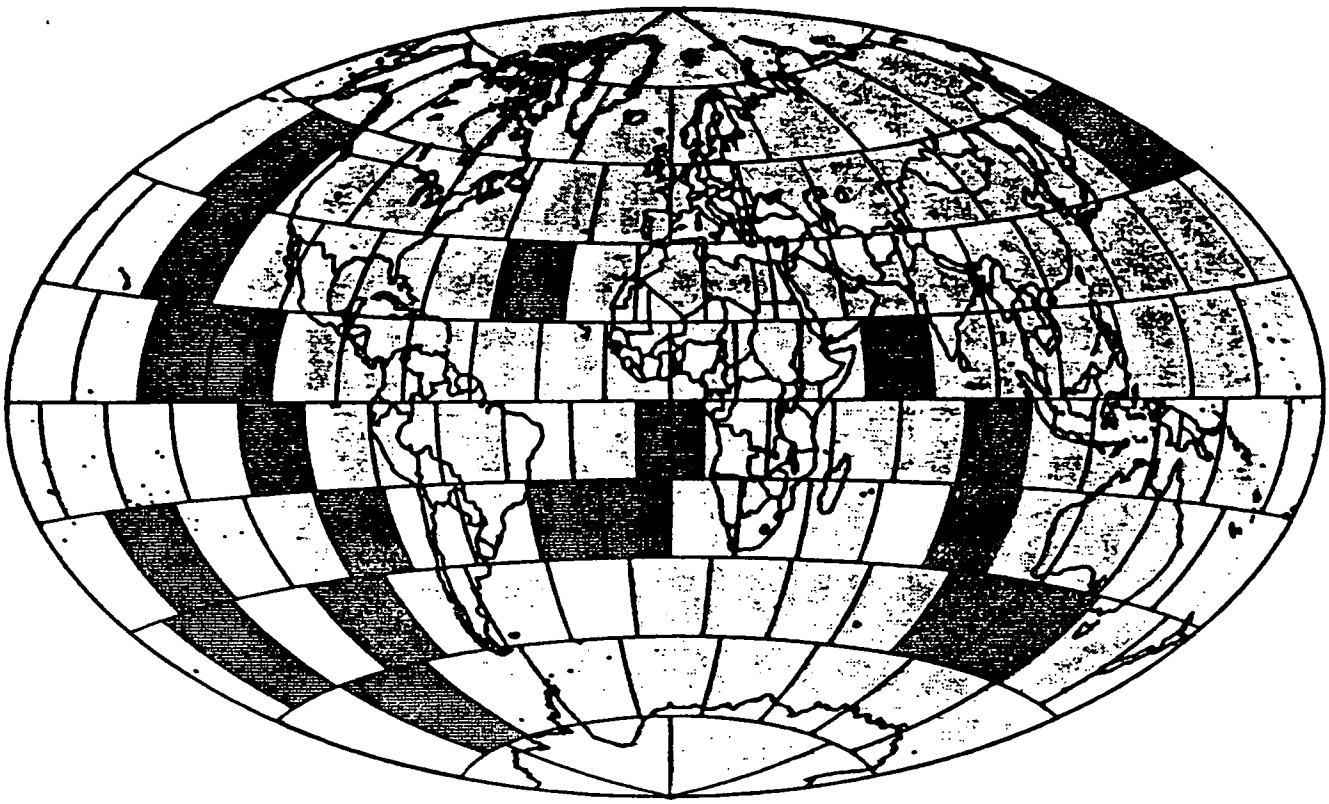
- The goal is to establish a global network of approximately 15-20 permanent broad-band ocean floor seismic observatories.

- One scenario for sensor emplacement on the ocean floor is to use holes drilled by the Ocean Drilling Project.

- Several technical challenges need to be overcome before this network can become a reality.

Proceedings of a Workshop on Broad-Band Downhole Seismometers in the Deep Ocean

Woods Hole Oceanographic Institution
Woods Hole, Massachusetts, 02543, USA



April 26-28, 1988

Convenors: G.M. Purdy and Adam M. Dziewonski

Sponsored by the Joint Oceanographic Institutions, Inc. and the U.S. Science Advisory Committee

OSN PLANS

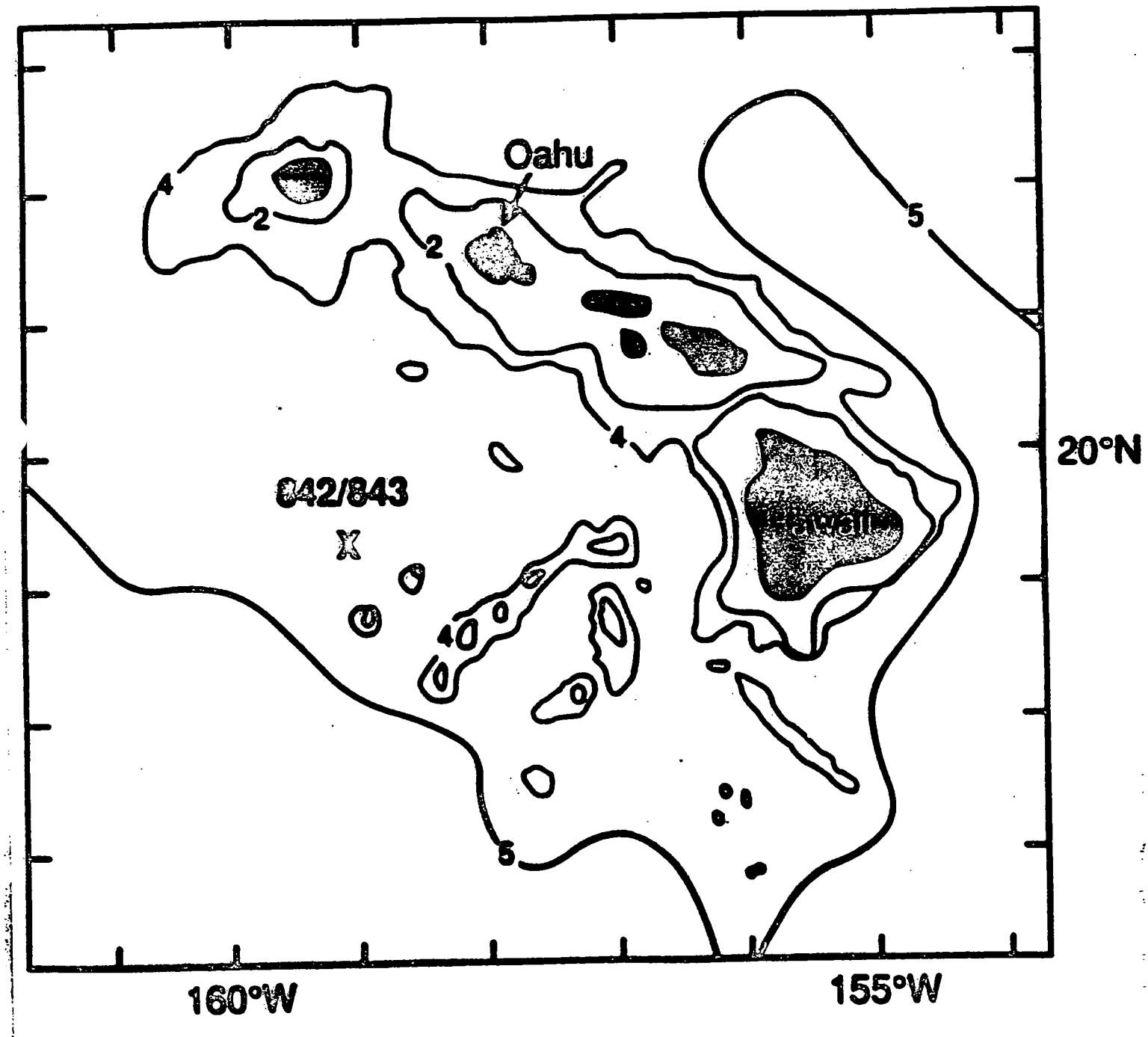
Phase 0: Present - 1992; Existing funds support modest efforts in sensor testing etc.

Phase 1: 1992 - 1994; Major pilot experiment in 1993 with downhole broadband sensor at various depths below seafloor, surface and surficially buried broadband sensors, long-period pressure measurements, current meters; and located adjacent to a high quality island station.

OSN PLANS

Phase 2: 1994-1996; Emplace 5 permanent observatories and carry out programs of auxiliary measurements with multiple returns to the sites to monitor system performance (e.g., corrosion), adjust sensor depth perhaps, and recover seafloor unit.

Phase 3: 1996-?; Routine emplacement of remaining 15 stations at the rate of approximately two per year and establishment of full capability for data handling and routine station maintenance.


Oahu
Hawaii
842/843
X
2
2
4
4
5
5
20°N
160°W
155°W

FEDERATION OF DIGITAL SEISMOGRAPH NETWORKS

The Federation was formed to provide a forum for:

- developing common minimum standards in seismographs (e.g., bandwidth) and recording characteristics (e.g., resolution and dynamic range);

- developing standards for quality control and procedures for achieving and exchange of data among component networks;

- coordinating the siting of additional stations in locations that will provide optimum global coverage

FEDERATION OF DIGITAL SEISMOGRAPH NETWORKS

- **Membership**

  IRIS (US)

  USGS (US)

  UK

  FRANCE

  AUSTRALIA

  ORFEUS

  JAPAN

  GERMANY

  ITALY

  CHINA

  USSR

- **Founded in 1986**

FDSN Working Groups

- DIGITAL BROAD-BAND SEISMOGRAPHIC SPECIFICATIONS
- SITING PLANS
- DATA COLLECTION AND EXCHANGE FORMATS
- DATA

JOIDES-FDSN LIAISON GROUP

A.M. Dziewonski, Harvard
G.M. Purdy, WHOI
} Co-Chairs

B. Romanowicz, IPG Paris

J. McLain, U.C. Davis

MEETING OF THE FDSN-OSN LIAISON COMMITTEE

VIENNA - AUGUST 13, 1992

ATTENDEES: G.M. PURDY
A.M. DZIEWONSKI
B.A. ROMANOWICZ

° DISCUSSED PLANS FOR THE FDSN MEETING ON AUGUST 15TH

° REVIEWED OPTIONS FOR EARLY USE OF OSN1

° REAFFIRMED PRIORITY OF OSN2, AND REVIEWED OPTIONS FOR EARLY PLACEMENT OF SENSORS THERE

° ESTABLISHED NEED FOR IMPROVED BROADER COMMUNICATION BETWEEN INTERNATIONAL PARTICIPANTS

GUESTS: T. KANAZAWA (UNIVERSITY OF TOKYO)
J.P. MONTAGNER (IPG - PARIS)

FDSN MEETING
VIENNA
AUGUST 15, 1991

° REPORTS OF THE SUCCESS AT OSN1 OFF OAHU WERE ENTHUSIASTICALLY RECEIVED.

° A FORMAL RESOLUTION IN SUPPORT OF OSN2 WAS UNANIMOUSLY ADOPTED.

° FDSN DECIDED TO INCREASE THE SIZE OF ITS REPRESENTATION ON THE FDSN-JOIDES LIAISON COMMITTEE FROM TWO TO THREE INDIVIDUALS BECAUSE OF A DESIRE TO BROADEN INTERNATIONAL PARTICIPATION, AND STRONGLY URGES PCOM TO SIMILARLY INCREASE THE JOIDES REPRESENTATION.

FORMAL RESOLUTION OF THE FEDERATION OF DIGITAL SEISMOGRAPHIC NETWORKS

VIENNA, AUGUST 15, 1991

The planned ODP Leg 145 in northwestern Pacific represents a unique opportunity for the global seismological community to make progress in its efforts to instrument the ocean floor with a permanent network of broad band stations, complementary to the now well developed land based global network. The location of the hole NW-1 of this leg falls in one of the 18° x 18° squares identified as "gaps" in the distribution of global seismographic stations. The drilling of a cored hole with re-entry cone at location (NW-1) during Leg 145 for the use of global seismology is strongly recommended by the FDSN. We also note that drilling of this hole in conjunction with the principal objectives of the ODP, represents an example of very effective use of the unique resource represented by the drilling ship.

Adopted unanimously by FDSN on August 15, 1991.

FIGURE 1. Map showing general location of Navy Fan in the California continental borderland. Stippled areas are the turbidites of the Coronado Fan – Navy fan System. Dotted line is the international boundary. Shows location of key seismic lines and cores on Navy Fan.

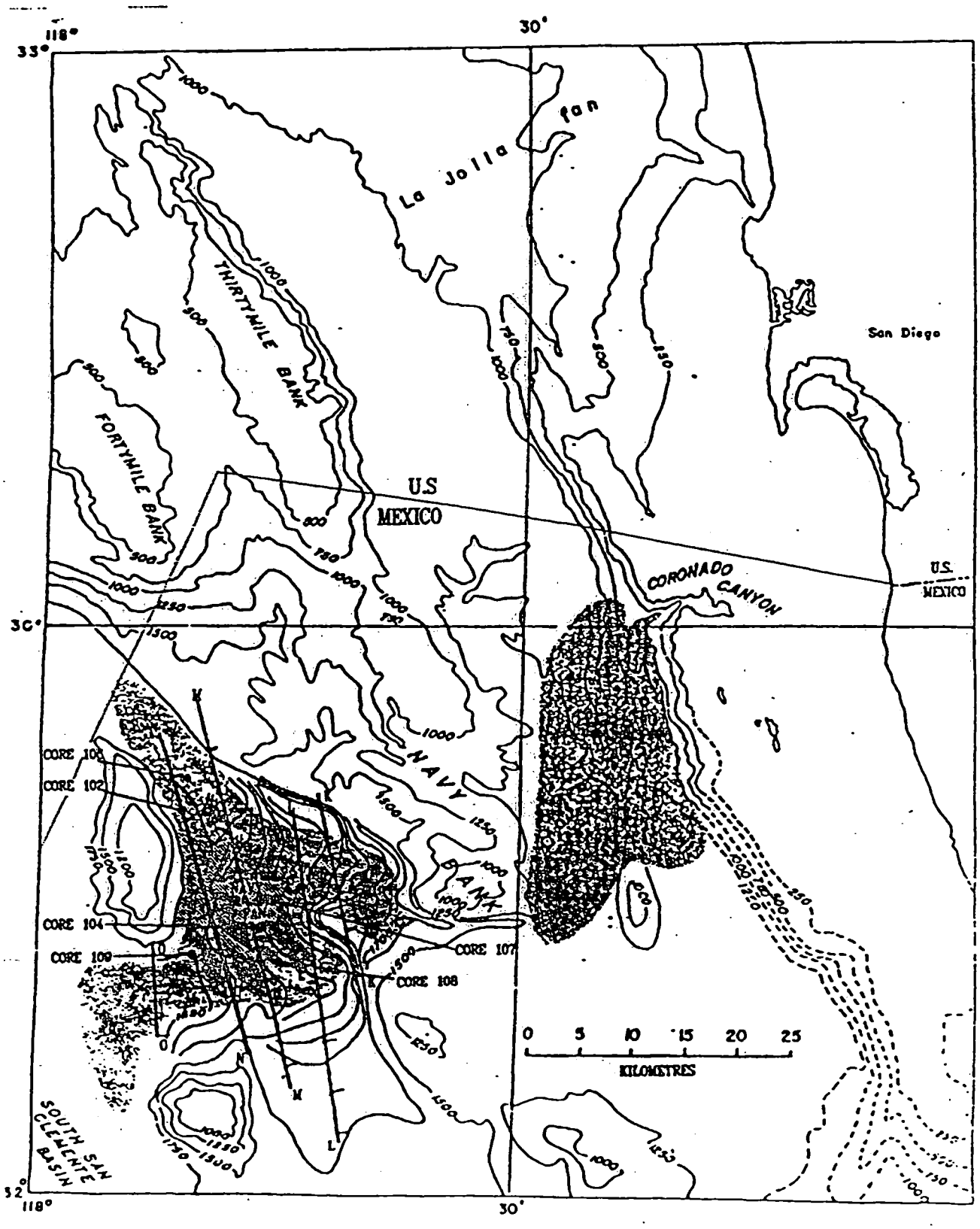


TABLE 1. CASCADIA I DRILLING AND DOWNHOLE MEASUREMENT TIMES (DAYS)

Site	Priority	Location Latitude, Longitude	Water Depth (km)	Penetration (km) (days)	Drill[a] Time	STD[b] logs + FMS	WSTP 6 runs	CONE[c] PLUG	PACKER drill string	PACKER wire line	VSP	BHTV	TOTAL
VI-5	1	48°40'N 126°50'W	1350	600	3.1	1.5	0.3	4.5	0.7	0.7	1.5	0.3	12.6
VI-1	1	49°09'N 126°37'W	2500	600	4.5	1.6	0.3	-	-	-	-	-	6.4
VI-2d	1	28°16'N 126°24'W	2100	500	3.6	1.6	0.3	-	-	-	1.5	-	7.0
VI-3*	2	48°19'N 126°17'W	1350	500	3.1	1.5	0.3	-	-	-	-	-	-
OM-3	1	44°38.53'N 125°19.55'W	2655	540	3.5	1.7	0.3	4.5	0.7	0.7	1.5	0.3	13.2
OM-3A	2	44°40.37'N 125°19.55'W	2625	585	3.5	1.7	0.3	4.5	0.7	0.7	1.5	0.3	-
OM-7	1	44°40.38'N 125°07.34'W	668	300	1.6	1.2	0.3	-	-	-	-	-	3.1
OM-7A	2	44°40.38'N 125°03.12'W	1005	630	2.9	1.6	0.3	-	-	-	-	-	-
OM-8	1	44°59.55'N 125°22.22'W	2400	660	4.8	1.7	0.3	-	-	-	-	-	6.8
OM-4+	1	44°40.37'N 125°19.69'W	1020	700	4.6	1.7	0.3	-	-	-	-	-	6.6
OM-2+	1	44°40.37'N 125°21.58'W	2865	640	4.0	1.8	0.4	-	-	-	-	-	-
→ Navy Fan ~4-6 days (enroute to San Diego) ←													
													55.7
												Total Time[d]:	57.7

[a] Estimates for single hole, using APC/XCB to TD or bit destruction
[b] Assumes SES
[c] Includes time to drill hole 8 to 500 m, set casing, and install plug
[d] Total time includes two extra days for additional downhole experiments (Geoprops/LAST)
* This site to be regarded as alternate to Site VI-5
+ Only one site between these two will be drilled, depending on results of previous sites

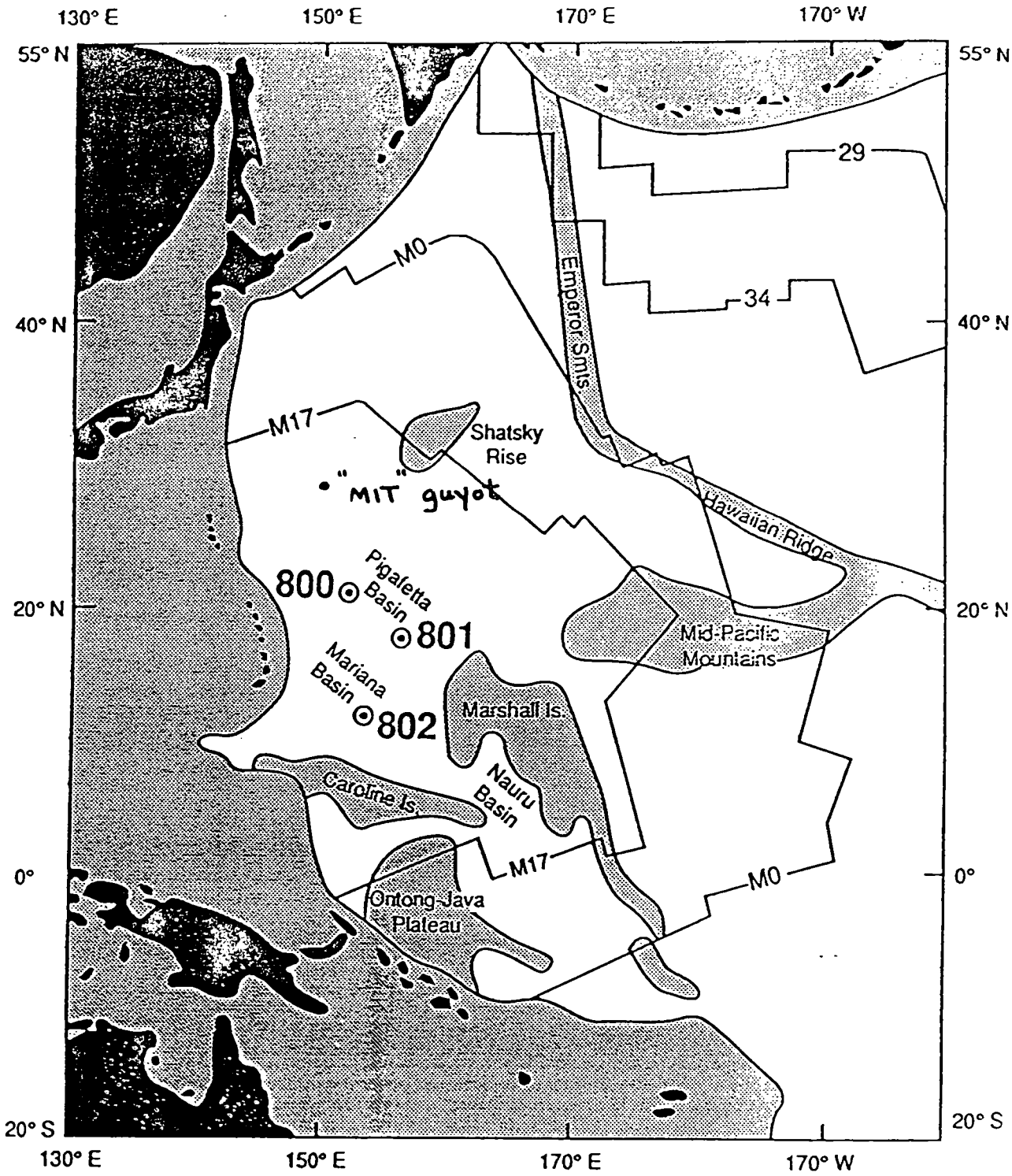


Figure 1. Bedrock isochrons determined from magnetic anomaly lineation mapping on the Pacific plate (from Larson et al., 1985) superimposed on groups of islands, atolls, and guyots in the western Pacific Ocean. Circles denote locations of ODP Leg 129 Sites 800, 801, and 802.

Table 1. Site summary table

Site/transit	Lat. (N)	Long. (E)	Penetr. (mbsf)	Transit (days)	Drilli (days)	Log (days)
LEG A (143)						
Honolulu to Allison-A				5.0		
Allison-A	18°27'	179°32'	~600		4.8	1.2
Allison to Huevo				1.5		
Huevo-A	21°19'	174°18'	1000+		14.7†	2.5
Huevo-B	21°22'	174°18'	400		3.5	1.0
Huevo to Syl-3				3.5		
Syl-3	11°00'	164°45'	~900		11.7	3.4
Syl-3 to Majro				2.5		
			Total days	12.5	34.7	8.1
			Total leg		55.3 days	
LEG B (144)						
Majro to Limalok				0.5		
Harrie-1	5°29'	172°20'	~450		4.6	1.2
Harrie-2	~5°35'	~172°23'	200		1.6††	0.9
Limalok to Lo-En				2.6		
Pel-3	10°07'	162°48'			5.7	1.2
Lo-En to Wodejebato			0.7			
Syl-1	11°58'	164°57'	~400		6.5	1.2
Syl-2A	11°54'	164°56'	150		1.6††	0.9
Wodejebato to MIT → [80 C] ~3 days				4.9 ←		
MIT-1(E)	27°18'	151°53'	820+		12.0†	1.2
MIT to Takuyo-Daisan				2.2		
Seiko-1	34°15'	144°15'	~200		2.6	0.9
Seiko-2	34°15'	144°15'	~200		2.1	0.9
Takuyo-Daisan-Tokyo Bay			1.0			
			Total days	11.9	36.7	8.4
			Total leg		57.0 days	

† Includes significant basement penetration; †† pelagic cap only.

Assumptions: 1.) Ports are Majro to Tokyo (or vicinity).
2.) Steaming times are for great circles at 10 kts.

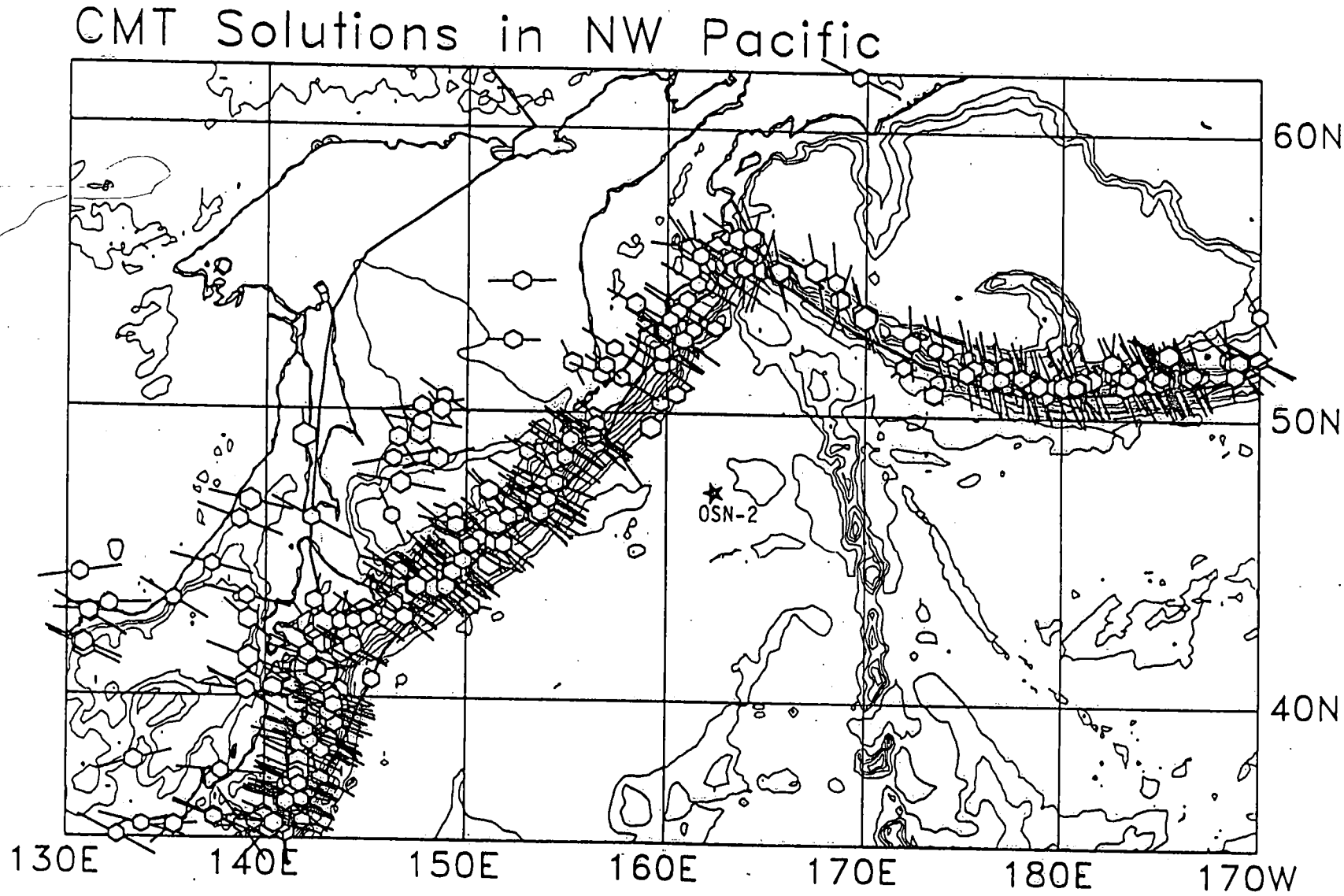

CMT Solutions in NW Pacific
60N
50N
40N
OSN-2
130E
140E
150E
160E
170E
180E
170W

Figure 2

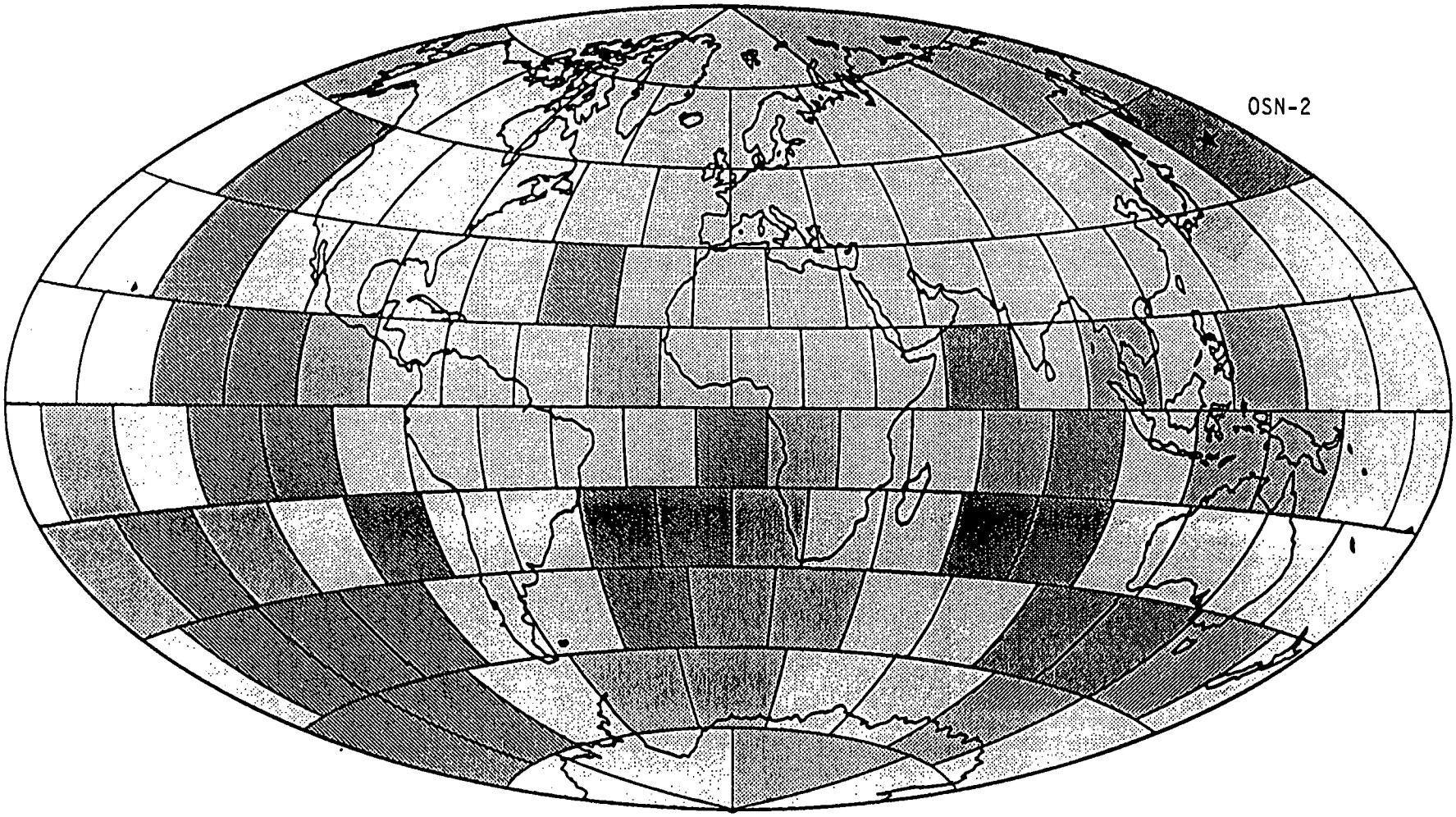


Figure 1

Leg 145: North Pacific Transect

Leg summary put together by OHP, March 1991 (inc. S-3):

Site	Transit	Drill	Log	Total
(Yokohama/Detroit Smt.)	5.8 days			
DS-1 (bsmt., T.D. 500 mbsf)		5.3 days	1.6 days	6.9 days
DS-2 (no bsmt.)		1.5		1.5
DS-2A (no bsmt.)		1.5		1.5
DS-3 (bsmt.)		10.3	2.1	12.4
(Detroit Smt./NW-1A)	1.4			
NW-1A	3	3.8	1.6	5.4
[OSN-2, supp. science proposal S-2]		[4.0]		[4.0]
(NW-1A/NW-4A)	3.5			
NW-4A		3.8	1.5	5.3
(NW-4A/PM-1)	5.1			
PM-1		5.2	1.5	6.7
(PM-1 to Victoria)	3.5			
TOTALS:	19.3	(35.4)	(8.3)	43.7

Leg length, including OSN-2: 63 days.
Projected leg length: 56 days.
Deficit: 7 days (~ PM-1).

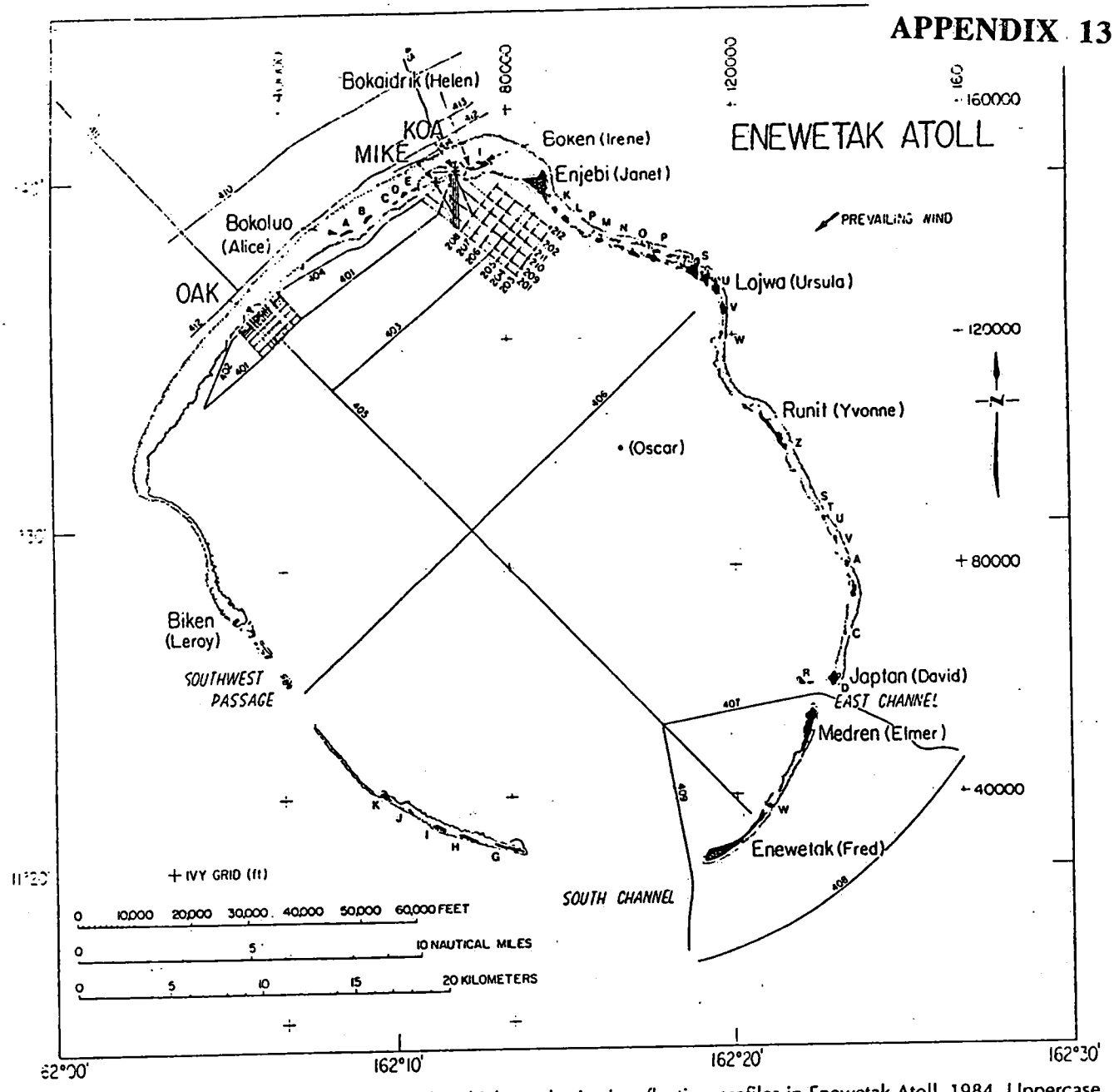


Figure 1. Sites of USGS refraction profiles and multichannel seismic-reflection profiles in Enewetak Atoll, 1984. Uppercase letters are first letters of site names. (See table 1 of the Introduction to the volume.)

approximately a 300-ms depth outside the crater; these reflectors are delayed by up to 50 ms beneath ground zero. The 75-m (246 ft) streamer used by Fairfield Industries was too short to obtain reliable velocities even outside the craters. We anticipated that the 150- and 300-m (492- and 984-ft) streamers used during this survey might provide velocities that would yield depths accurate to approximately 5 percent. This approach would allow us to determine what part of the time delay beneath OAK crater was due to velocity decreases (or increases?) beneath ground zero and what part was due to actual depression of the rocks. Calibration of the seismic velocities by check-shot surveys were run in the drill holes at ground zero and reference holes for both KOA and OAK craters (figs. 4, 5). In addition to allowing a more accurate time-to-depth conversion of the reflection profiles, the interval velocities derived from the check shots provide a direct measure of the depth of detonation effects on rock properties.

A plot of one-way seismic travel time versus seismometer depth in the KOA drill holes shows a delay below ground zero of up to 8 ms in one-way travel-time at approximately a 220-m (721 ft) depth (fig. 4). Between the sea floor and approximately a 130-m (426 ft) depth, the observed values of both reference and crater holes appear to be similar within the scatter of the data. Between 130 and 220 m of depth (426–721 ft), the ground zero hole (KBZ–4)

GUIDELINES FOR THE MONITORING OF THIRD PARTY TOOLS

(published in February, 1991, *JOIDES Journal*)

There are two types of third party tools: **Development Tools (instruments under development)** and **Mature Tools (established tools)**.

A.) For a tool to be considered an **ODP Development Tool**, and thereby scheduled for deployment, several **criteria** should be satisfied.

(1.) There must be an identified **principal investigator.**

(2.) LDGO (for wireline tools) or TAMU (for all others) should formulate a development plan in conjunction with the principal investigator, and then inform DMP of this plan.

(3.) The **development plan** should:

- indicate acceptance, desirability, financial and technical feasibility, and usefulness of the measurements;

- identify development milestones;

- make provision for **initial testing on land;**

- satisfy safety considerations;

- specify shipboard requirements such as the data processing necessary to make the information accessible on board ship, any special facilities (emphasizing areas where the tool is not compatible with existing hardware/software), and appropriate technical support;

- contain a statement of intent that the tool would be available for post-development deployment in ODP.

If DMP endorse the development plan, and subject to PCOM approval, the Panel will appoint a coordinator to monitor on behalf of the Panel the tool's progress through the development plan. The Panel monitor will receive reports from the Principal Investigator on request and will present these to DMP. DMP will review progress at regular intervals and will evaluate tool performance after each deployment. Day-to-day monitoring will be the responsibility of TAMU and LDGO. A tool cannot be regarded as an ODP Development Tool, and therefore cannot be scheduled for future legs, if it has not undergone the

above procedure. All tools that are currently scheduled must have a development plan formulated as soon as possible. **Once a tool has been accepted by DMP as a Development Tool, the Principal Investigator will be required to co-sign the development plan with TAMU or LDGO as appropriate as a visible accedence to the provisions of the plan.** A Development Tool cannot be deployed on an ODP leg unless TAMU/LDGO and DMP are fully satisfied that the terms of the development plan have been fully met.

B.) For an ODP Development Tool to undergo the transition to an **ODP Mature Tool**, i.e., an established tool operated by TAMU or LDGO, there must be DMP endorsement. This endorsement will be given after Panel review of a proposal prepared by TAMU and/or LDGO and submitted to DMP. This proposal must satisfy DMP on the following counts:

- cost of routine operations including shipboard data processing;

- requirements for routine operations/processing;

- availability of spare components;

- facilities for maintenance;

- existence of an operating/maintenance manual;

- safety considerations;

- long-term usefulness of data;

- established track record both in land tests and shipboard deployment.

Where several Development Tools are competing for the same Mature Tool slot, DMP will require tha appropriate contractor to evaluate all tools and submit their multiple-tool evaluations to DMP for Panel consideration.

C.) Where an established third party tool is loaned for use in ODP, this tool will have to satisfy the criteria in paragraph B in order to be accepted as the technical equivalent of an ODP Mature Tool. Tools which do not satisfy these criteria cannot be programmed for future ODP legs.

D.) Last-minute requests to include an unproven third party tool within an ODP leg will not be accepted.