JOIDES PLANNING COMMITTEE
(PCOM)

APPROVED MINUTES

December 9-13, 1996
Biosphere 2, Arizona

Date Approved: April 22, 1997, Kona, Hawaii

PCOM Meeting
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A. Welcome and Introduction

1. Introduction of PCOM Members, Liaisons and Guests

Humphris welcomed all to the final PCOM meeting and thanked Mountain for organizing the field trip. She introduced the newcomers and asked everybody around the room to introduce themselves.

2. Logistics of the meeting

Mountain explained the logistics of the meeting and introduced Bill Harris, director of BIO2. Harris explained that Columbia University took over management of the facility in January 1996. This effort, spearheaded by Wally Broecker, is a remarkable and timely challenge that will make a serious investment in education, especially at the undergraduate level. This fall 30 students were enrolled in programs and BIO2 hopes to expand to 100 students. In addition, the habitat facility has been decoupled and is now open to the public; 200 visitors a year came through. Harris said he wants to use BIO2 as a conduit to the public to help them understand the value of science and its contribution to society. A public icon such as BIO2 can be very important in conveying the value of science to the public. The Biosphere structure is a remarkable facility, which cost over $150 million. Columbia University will do some additional renovations, but more scientific input is needed before they go ahead. He noted that Donald Temple is visiting from the DOE and is looking at the engineering aspects of the facility to determine the capabilities so that changes can be made. There is an unique opportunity to use this facility, even internationally. Harris wishes to reassure the public that their investment in BIO2 facility will payoff.

Mountain apprised PCOM of Marc Langseth's serious illness. Natland will compose an e-mail message from the committee to Langseth.

3. Approval of the Agenda

Humphris requested feedback on the Agenda Book and commented on its reorganization. An additional item under PCOM correspondence is a letter from Dick Von Herzen, distributed at the meeting. The report of TEDCOM was also moved forward as the Chair of TEDCOM had to leave early unexpectedly.

PCOM Motion 96-3-1 PCOM approves the Agenda of the 1996 December Meeting with the changes noted.

Proposed: Larson, Seconded: Natland *Unanimous*

4. Approval of the Minutes of August 1996 PCOM Meeting

PCOM Motion 96-3-2 PCOM approves the minutes of the August 1996 PCOM Meeting in Townsville.

Proposed: Sager, Seconded: Moore *Unanimous*

B. Reports of Liaisons

1. NSF

Malfait reported on the NSF budget (Appendix 1), approved prior to October, and pointed out that the total budget did not go up very much with respect to 1996. The NSF US Science Support (USSSP) funding went up a little, to $5.7 million. The money will be needed to support US participation at the joint Japan/JOIDES CONCORD Meeting. Regarding the ODP budget (Appendix 2), the ODP program plan funding was approved at $44.4 million, of which NSF will contribute 62%. The rest is provided by the other members. The budgets for FY '98 and FY '99 are being considered together because of the costs associated with the upcoming dry-dock of the *JOIDES Resolution*. TAMU will update on dry-docking later in the meeting. The dry-dock will require $6 million in funds, and NSF is seeking funds outside of the existing ODP budget.

Malfait reported on the timing of the decisions for ODP Phase III (Appendix 3) and said that one of the major issues is the number of partners who will continue their participation in ODP. In that respect, the next year will be very busy as important decisions will be made by the ODP Council (ODPC). ODPC meets in February and has requested specific items from JOI and JOIDES. In addition, the LRP implementation plan (to which JOI will add funding scenarios) will be considered by the ODPC, and JOI has been asked to explain how funds will be brought into the program. By February, partners have been asked to declare their preliminary intent to stay in ODP. In April, JOI will be submitting a 5 Yr. Program Plan to NSF which will be used to seek National Science Board approval for the US to continue in the ODP. A final decision from partners declaring their continued participation in ODP will be required in June/July. In July, there will be a decision from NSF regarding dry-docking and the 1999-2003 program. In August the National Science Board will meet to approve the funding for 1999-2003.

Malfait reported also on the following items:

- China's participation in the ODP is still under review at the State Department.
- The US Science Support Program's review is complete, and ODP received a very positive response from the Science Board, which approved the funding for 97-99.
- Initial environmental assessment of Antarctic drilling is going on in the expectation that PCOM may schedule a leg of Antarctic drilling in FY '98.
- The FUMAGES meeting held in Oregon went well, and about 50 marine geoscientists from the US attended. They were asked to identify long-term trends in the marine science field. One outcome of the FUMAGES meeting was the recognition of how important and vital ocean drilling is in addressing problems in marine science.
- NSF is still seeking a replacement for the position left vacant by Sandy Shor.

2. JOI

Falvey reported on six major topics.

(a) RFPs - Falvey commented on the RFPs for the WLS and SSDB, which have been publicized and said that responses will be accepted through mid-January. These will be later assessed by a subcommittee of EXCOM. A draft of the RFP for the next JOIDES Office, which will be a non-US one, has been prepared. EXCOM will review this in February as they wish to address certain issues, including the term length of the office and the SCICOM/OPCOM Chair. Each non-US JOIDES member may submit a bid for the JOIDES Office. Falvey noted the key components of the RFP (see Appendix 4).

(b) Internationalization Initiative - Falvey reported that he understands that Taiwan and the People's Republic of China have agreed to Taiwan using the name of Chinese Taipei so that both countries may participate together in ODP, but he added that no-one in Washington has heard of this agreement. Oman is also interested in joining the ODP, and many government agencies in Oman have voiced support for ODP. Oman wishes to take the issue of membership in ODP to the Gulf Cooperation Council in order to get wider support. Portugal is expected to join ESF in 1997. The effort to involve South Africa in the ODP will be renewed with the Cape Town port call in December 1997.

(c) Database Migration - JOI sought expressions of interest to assist TAMU with the database migration effort. Four responses were received, and all have demonstrated that they are qualified, have the required experience with Oracle data bases, and have highly qualified individuals on staff. A conference in TAMU to address database migration will occur in early 1997.

(d) Nansen Implementation Workshop- In October '96, Falvey attended a Nansen Implementation (NAD) workshop in Russia. The purpose of the workshop was to develop a proposal for scientific ocean drilling in the Arctic Ocean. A draft implementation plan is in circulation, and states that NAD will be seeking a close collaboration with ODP so as not to duplicate facilities of the two programs.

(e) Subsurface Biosphere Workshop - JOI will be sponsoring with InterRIDGE and others a Subsurface Biosphere Workshop in March in Washington, D.C. This will be advertised in the USSAC Newsletter.

(f) US Nominations to SCICOM - JOI/USSSP is seeking nominations for members on SCICOM. A nominating committee has been set up, that will make recommendations to JOI Board of Governors.

Carter asked what level of membership would be involved if the Gulf States show interest. Falvey responded that at this point a 1/6 level is being considered but that this may increase to 1/3 if larger states, including Saudi Arabia, join with Oman and smaller states to form a consortium. Sager asked what is the Korean level of participation. The answer is 1/12. This is why Chinese Taipei is under consideration as a potential 1/12 member. Natland inquired about the replacement of people who rotated off USSAC. Falvey described how replacement of USSAC members will be handled for October 1997. Sager asked about how the replacement of people rotating off PCOM will be handled. Falvey explained that the 7 Members of current PCOM who are not rotating off will have their names put forward and will be considered with other candidates for membership on SCICOM. Sager suggested that those who do not want to continue to serve should indicate this now so as to avoid consideration. Falvey

noted that the nominating committee will be doing more than just putting forward names. USSAC has suggested that an optimum number of replacement members is 4.

3. ODP-TAMU

Francis declared that he attended 29 PCOM meetings, and this will be his last. He reported on the following items.

(a) Leg Operations-

- **Saanich Inlet** - This was very successful, and was completed in only 48 hours on site. Maximum penetration was 105 m at the southerly site, and 118m at the northerly site. The tops of the cores were gassy. The cores show varved sediments and Mazama ash was encountered in all cores. The scientists are very pleased with the results.
- **Leg 169** - Several operational items worthy of note were mentioned. One month into the cruise, a medical evacuation was required for the DP operator. In the middle of leg, the cost of fuel in LA was found to be cheaper than in San Diego so the ship was brought into LA for refueling before going to San Diego. This action removed 30 hours from the science of the leg. A shallow water beacon positioning test was carried out during the leg: the ship was held to within 8% of position in 100 m of water. The biggest item was the loss of about 2200 meters of drill pipe while tripping out of the last hole, which cost the program $367,000. The cause was human error due to a problem with latching. Francis showed an overhead on which all downhole losses were shown: Leg 169 loss is fourth in terms of size (Appendix 5). This is the first time that such a loss has been due to human error, as the others have resulted from mechanical failure. Problems were encountered in San Diego by 5 non-US scientists who were threatened with fines of $3000 for not having the right visas. ODP commingled funds cannot be used to pay such fines. Francis wished to alert PCOM that a similar situation could potentially arise on 171B and 174A, and it is necessary to alert non-US participants of those legs. Francis suggested that non-US scientists should consult ODP travel for advice before sailing.
- **Leg 170** - Francis reported that the port call was a very busy one. The installation of a new radar delayed departure of the *JOIDES Resolution* by 12 hours. Soon after the start of the cruise, there was another medical evacuation requiring that the ship be diverted to Mazatlan, resulting in the loss of about 13 hours. He noted that these medical evacuations are not a problem around North America but can be a problem in more remote locations. As a consequence, TAMU is investigating better screening of participants and crew for legs in remote locations.
- **Leg 174A** - Subsequent to the PPSP meeting, Site 7B was disallowed because of the shallow water depth (less than 75 meters). Both the TAMU Safety Panel and PPSP were satisfied with respect to the hydrocarbon situation . TAMU consulted SEDCO-FOREX about Site 7B, but they were unwilling to relax the shallow water limit as Site 7B is in 66 meters of water.
- **Leg 175** - Francis said that eleven of the sites south of the Walvis Ridge were approved, but none north in the Angola Basin were approved. These sites are closer inshore and near a prolific area of oil production. This Leg will undergo another review at the February PPSP meeting at Scripps. Sites proposed with drilling depths to 400 m may be approved, but restricted to 100 meters penetration.

(b) Co-Chief Reviews- A number of comments emerged from the Co-Chief Review meeting, held at JOI in November: the highest number were about the gym, and next was the

problem of lab space on board *JOIDES Resolution*. Changes could be made at the next dry dock, and Francis showed a proposed extension to the Downhole Measurements lab on the top deck of the lab stack (see Appendix 6). This is an old design that dates back to 1993 when the plan was under consideration for the December '94 dry-dock. This renovation was not carried out because the cost of $400K was prohibitive. This plan is again under consideration for the 1999 dry-dock. On Leg 168, 4 reentry holes were drilled and there was a problem with insufficient space to lay out all the material for the CORK cabling, and this raised concerns about damage to CORK cabling. Francis asked PCOM to provide TAMU with advice on the plans for a proposed extension to the Downhole Measurements lab and the need for space to lay out all the material for the CORK cabling.

Also under consideration is a containerized microbiology laboratory at a cost of about $300K. Francis showed a list of items that would be needed to outfit a basic microbiology lab. TAMU staff scientist John Firth put together the materials list with input from microbiologists, including John Parkes in UK. The problem of the location is now under consideration. One possible location is where the engineering van is placed when needed for complex legs. Then the question is raised as to where would the engineering van go when needed? TAMU is running into problems with space on the *JOIDES Resolution*. The Co-Chiefs questioned the need for the microbiology lab and favored a phased approach to the establishing of such a facility. TAMU needs advice from PCOM.

(c) Antarctic Drilling- Francis reported on preparations for Antarctic Drilling, and specified that the term comprises everywhere south of 60 degrees south. Last September he attended meetings at NSF to talk about this. Items included the process of getting permission to drill there and MARPOL requirements for ships operating in the Antarctic. The process to get clearance includes an environmental assessment of drilling in Antarctica. TAMU has already written a document which will be soon distributed. This will probably be published in the Federal Register, then NSF will appoint an individual who will make a finding. As ODP is technically a US program, ODP has to apply for environmental approval to drill there through US rules. The *JOIDES Resolution* at present does not comply with MARPOL regulations as they apply in the Antarctic, i.e., garbage handling and release of oily waters. He estimates it will cost $150,00 to bring the ship up to standard. A proper incinerator will be needed to replace the burn basket. Garbage will have to be compacted and stored until a port is reached. Also there is the need to change the drainage system to the rig floor to collect oily water. Non-US participants must comply with their own national legislation; e.g. a Swedish citizen needs a special permit to go south of 60 degrees.

(d) Reorganization at TAMU- Francis reported about restructuring at TAMU and said it took place with the objective of making service more efficient and cost effective. Management consultants were hired in early summer. The new structure, effective on December 2, comprises two sorts of deliverables: services and operations (see Appendix 7). The major change in this structure is that the Technical and Logistics Support department has been eliminated. Staff scientists will start acting as Project Managers from Leg 176. This change will give more responsibility to staff scientists, although in some special cases, the Project Manager will be an engineers. Fifteen positions have been modified, but only nine of these people have lost their jobs. Five new positions have been created. In total, fourteen positions have been eliminated. Francis said this will result in a saving of 280K per year.

(e) DCS Development- Low friction seals were not installed in San Diego because of problems with the vendor. That was postponed initially to Charleston, then again to Halifax. It

has been proposed to change from a passive to an active heave compensation system. This change can remove up to 90-95% of the heave. This was discussed by TEDCOM in Japan and then at a subcommittee meeting in College Station in early December. As a result, Proposal 509 for a DCS Engineering test is withdrawn.

(f) Conoco-Hydril "Riserless Drilling" joint-industry project- Francis said that Phase I-feasibility studies started in October 1996, with more than 10 industry members participating. ODP-TAMU is participating as a non-paying member but have signed a confidentiality agreement. Phase II-prototype design and testing will possibly start in May 1997. Conoco has expressed an interest in using the *JOIDES Resolution* for prototype testing for two weeks in mid-1998.

(g) *JOIDES Resolution*- the official name change of the ship took place on 11November.

Moore asked the mechanism for providing advice to Francis regarding the microbiology lab. Humphris said to make recommendations through JOI or participate in the Subsurface Biosphere Workshop. Johnson pointed out that the advice from the Workshop will not provide an objective answer, and he thought that an objective answer should come from SCICOM after they consider all the input from various sources. Humphris noted that the Workshop is open to international participation, but Mevel and McKenzie were not aware of it. Larson noted that these are open to the public but funds to support participation will be available only for US participants. McKenzie said that at the European Marine and Polar Science Meeting meeting in Southampton, the deep biosphere was discussed, and that ESF and MAST would like to hold a European workshop in early spring (possibly May), addressing similar issues. Pearce said that lots of different groups are organizing workshops and asked how this will influence SCICOM establishing a PPG? Humphris noted that we will return to this later in the meeting. Fox said that money for a microbiology lab will need to come from sources other the $6 million that Malfait mentioned. Carter noted this effort is related to a new Pilot Project in the LRP and it will involve a new user community. He asked whether these new user groups can be requested to provide funds for this new facility. Humphris asked Francis when he will be detailing plans for the refit. Francis said it is on-going. Fox added that by the spring or summer of this year, feedback on refit items during the dry-docking is needed. Humphris suggested that this be given to the new SciMP as an action item. This way SCICOM can provide some recommendations at their August meeting. Moore noted that DMP looked into this last year and PCOM endorsed their recommendation last December. Brown asked whether it is possible to put the biology lab in the same area with the new Downhole Measurements laboratory extension. Fox said that it is possible, but they might be separated by walls.

Regarding the restructuring at TAMU, Sager asked how TAMU will deal with the fact that the people who were let go took away extensive logistical experience. Francis said that there was a lot of duplication previously and he feels that TAMU can cope with the change. Mevel asked whether staff scientist turnover will affect their role as Project Manager as they may not be at TAMU for the entire project. Fox noted that it will mean about an 18 month-2 year commitment and thus is not too long.

PCOM Consensus 96-3-3
PCOM supports the concept of a Downhole Measurements lab extension.

PCOM Motion 96-3-4
PCOM notes with interest the proposal from Conoco that ODP continue to be involved (at no cost) in Phase II of the riserless mud circulation development. PCOM endorses continue ODP involvement in this development project.
PCOM is prepared to consider the scheduling of up to 14 days of testing of the prototype system sometime late in FY'98; provided all costs incurred are paid by Conoco/Hydril, and sufficient funds are generated such that ODP could acquire access to an alternative platform for at least an equivalent time. This will be in order to carry out a high-priority mini-leg that addresses a component of the Long Range Plan.

Proposed: Natland, Seconded: Moore *15 For, 1 Abstain*

4. ODP-LDEO

Goldberg reported on the following items:

(a) logging results from recent legs (see Appendix 8).

(b) INMARSAT SeaNET System -The system transmits with a high speed data capability allowing data to be sent to LDEO, where it is processed and returned to the ship. It was tested on Leg 170 and all potential problems were dealt with in advance so that the system worked flawlessly. (See Appendix 9 for specifications). The current VSAT system will stay on board as the primary system for backup and for testing of cc-mail by TAMU.

(c) Upcoming logging operations (see Appendix 10).

(d) Projects and activities - The Data Migration Project proceeds well. Completion of stage 1+ was reached in November 1996. The next target is March for the remaining holes. Upcoming projects and activities for 1997 include further enhancements to the web interface, as well as work on data types not currently in the database (e.g., FMS, LWD, BHTV). Goldberg also reported on the status of CLIP, which is moving ahead well. It was used extensively on Leg 167. The development of both CLIP and Splicer will continue into 1997. Goldberg said that there will be a Splicer demo at the AGU ODP booth, which is joint with TAMU and JOI. Goldberg reported on the core-log correlation project which started last October and was jointly funded to Leicester and LDEO. Testing of image scanning software is underway, with a possible deployment of the system on Leg 173. Tests made so far have given good results. Images scanned with the device have a resolution of 10 pixels per mm, which is excellent for this purpose. Another package, Diamage, allows correlation of a scanned piece of core with log data. Goldberg showed an example from Leg 166 with highly and less reworked intervals in carbonate-rich sediments, where different correlations were done with Gamma Ray, FMS and resistivity. These types of correlations will be the base of an Atlas they plan, and he will refer to this project later on in the meeting.

Sager asked whether only one of the three different core log-image correlation programs will be maintained. Goldberg said this is not necessarily true. Sager felt that it is not an efficient use of resources to run different applications to do same thing. Goldberg said that they are still in the test phase.

C. Review of FY '97 Schedule

1. Update on Hammer Drill-In Casing

Francis reviewed the FY '97 schedule, and mentioned the letter he wrote to Humphris regarding scheduling in high latitude legs (in Agenda Book). The letter reviews the history of what has happened to legs scheduled in that area at different times of the year. As a consequence, TAMU must be more cautious and is obliged to schedule the ship at the optimal time.

Francis reported that TEDCOM is very optimistic about the hammer drill-in casing, but there are some technical problems that need to be resolved. These are:
(a) pumping capacity - hammer drilling will require much more pumping capacity on the ship. The integrity of high pressure lines has been already checked, but the ability of pumps to pump these vast amounts of water still needs to be tested. The answer to this will be known within a week.
(b) weight-on bit - another issue is the weight-on bit needed to activate this 12.25" hammer needs to be below a certain amount (~4 tons). Whether this is possible will be determined in January '97.
(c) land test - a land test will take place in January in Norway, and the results will be known in mid- February.
(d) design - the design part has not started yet, but it should be no problem.

Humphris said she asked ODP-TAMU to come to this meeting with a specific recommendation on the issue of whether a test in FY '97 should stay in the schedule. Francis said he cannot answer until after the land tests. Francis suggested that if it was not ready for Leg 174B, there will be a transit across the Indian Ocean during which the ship would go past Sites 735 and 757 where a test for hammer drilling could be made. He recommended that, if Leg 178 is going to be the Western Antarctic Peninsula, then hammer drill-in casing be postponed to 1998, and all the days saved on Leg 174B be used to bring the schedule forward so that Leg 178 is in the best weather window. Humphris said she is interested in TAMU's view for FY '97, and whether they will be ready for hammer drilling on Leg 174B. Francis said TAMU cannot say until February if it will be ready. Humphris said that February is very close to the beginning of that leg. Francis said that it is not possible to change the schedule on short notice for the impact on the scientific party.

Mevel questioned the idea of testing at 735B and said the MARK area was chosen for the test as it is the right environment. Francis said that this suggestion is motivated by weather windows for FY '98 drilling. Goldberg expressed two concerns: (1) the Charleston port call is longer in order to load pipe: does this preclude any other port activities? There is then the implication that the wireline logging compensator will not be loaded, and postponed by another leg. (2) Has Leg 174A changed in its duration in any way? Francis replied that this is unchanged. Natland commented that TEDCOM asked the same question posed by Humphris and, although there is a difference of opinion with TAMU, they recommended that the test proceed. The stopping points: are 1) the bench test on 6-10 January, and 2) hammer field tests on 20-24 January. Mevel said PCOM already voted on a contingency plan at the spring meeting. Humphris pointed out that there are two separate issues. First, there is the issue of adjusting the schedule to fit the weather window for the Antarctic. This will depend on what PCOM decides to schedule. The second issue is that there is already a recommendation in

place for the use of the time if the hammer drill-in casing test is postponed. In addition, there is a DMP recommendation to use the time for the LWD test proposed in LOI 72. In terms of whether the alternatives could be ready - New Jersey is not a problem, and the proponents of the Barbados CORK say they would be need to know by the third week in January. Francis said that if a CORKing program was going to replace the hammer drilling, Tom Pettigrew would have to do the engineering for the CORKing program, and he is also doing engineering for hammer drilling. Humphris asked Falvey how important the PR activities at the New York port call are. Falvey said NSF felt that this is critical to renewal activities, and he passed this information on to OPD-TAMU.

Humphris confirmed that there is a recommendation from the spring 1996 meeting on how to split any time that might become available, but she is concerned that if TAMU is not ready with hammer drilling, they also may not be ready to do the CORKing, as it involves the same engineers. Humphris suggested this discussion be deferred until there are cost-estimates available, and the FY'98 schedule has been discussed. Natland put forward a motion supporting the TEDCOM recommendation for the schedule of testing of hammer drill-in casing that culminated in sea tests on Leg 174B. The motion was not seconded.

PCOM Consensus 96-3- 5
PCOM reaffirms Motion 96-1-9 regarding the reallocation of time that may be available on Leg 174B. Any time will be reallocated on a 50-50 basis to Leg 174A and Lol 69 for the CORKING work, with the proviso that if there are required port changes, it does not impact the science time on other legs.

D. FY '98 Science Program

Humphris pointed out that before addressing the FY'98 schedule, it is necessary to review conflicts of interest. Conflicted PCOM members are Carter, Moore, Suyehiro, Larson. People in the room other than PCOM members who are conflicted are Gieskes , Hay, Goldberg, Moran. Humphris pointed out that conflicted members can stay in the room during general presentation of the ranking unless there are major objections. When discussion is leading to a vote, conflicted PCOM members will be asked to leave the room, as well as any other conflicted people. Shipley requested a ruling on whether he is conflicted as he participated in the collection of data that led to the Nankai Trough proposal, but he is not a proponent. Humphris declared him not to be in conflict.

1. Thematic Panel Chairs Presentation of Prospectus

Ocean History Panel (OHP)

Tom Loutit reviewed OHP highly ranked proposals (464, 441, 367) and said he would leave discussion on Antarctic areas to Bill Hay who will present the ADPG report. The panel's view to support their ranking can be summarized in the saying that "the past is key to future", and Loutit reviewed the themes of the ODP LRP pertinent to the highly-ranked proposals.

- **Southern Ocean Paleoceanography (464)** - This proposes a transect of holes from mid to high-latitudes across the polar front zone, with water depths of 2-5 km intersecting all deep and bottom water masses. It allows very high resolution studies because of high

sedimentation rates, plus a look at long-term change, because of the age range of the targets from Eocene to present. The panel felt this will cover topics and areas of interest to the program, and sites proposed here fill important gaps in both time and geographic objectives. Specifically the objectives are to to look at high-resolution, late Neogene paleoceanography, and to look at the long-term Cenozoic history of the Southern Ocean. This has been a long-term plan of cooperation between US and Germany, the sites objectives are clear, well formulated and achievable. If scheduling is in the right time window, chances of success are very high.

- **Southwest Pacific Gateways (441)** - This proposal looks at the Deep Western Boundary Current (DWBC) east of New Zealand and proposes a series of sites to investigate the history of the deep west boundary undercurrent. There are many more objectives than just the evolution of the DWBC, including relationships between plate tectonics,eustacy, and circulation, thereby addressing objectives of interest to other panels as well. In addition, six hypotheses to be tested are clearly stated, including: 1) that a four-layer ocean model has applied since the early Miocene, 2) that rates of production of deep water masses and the paleoflow of the DWBC has varied between glacials and interglacials. The proposal is scientifically mature and wants to test hypotheses that have been considered important by the panel before. The only issue at this time is that some Site Survey data are still missing which should complete all the data that are required
- **Great Australian Bight (367)** - The objectives of this proposal are split between OHP and SGPP, and it was ranked number 3 by both. The Great Australian Bight provides the opportunity to look at the evolution of cool water carbonate environments, facies, and biota, as well as the evolution of water masses in that region as Australia has moved to the north. This program is also designed to look at sea-level variations and the stratigraphic response. If shallow water drilling can be achieved, the Miocene sea level synchroneity story can be tested by looking at some of the same surfaces dated from Leg 150 and Leg 166. Accumulation rates for this area are low, but there is a good possibility for correlation. OHP felt this was best proposal ever in the system in terms of presentation and readiness, and the responsiveness of the proponents.

Mix commented that 464 provides a test of two views on how the ocean works: does the ocean circulate though buoyancy forcing, or does the ocean circulate through wind forcing? In the case of wind forcing, the view is that in the Southern Ocean, there is infinite fetch around the Circumpolar Zone which changes sloping isopycnals and draws water out of the interior of the rest of ocean by geostrophy. The proposed depth transect crosses all relevant ocean masses, and will determine ocean circulation where wind forcing should be expected. Kudrass said that another element of interest is the shallow water changes in arctic and subtropical forms, and there are three holes with high resolution, addressing exactly the question of how these water masses moved during that time.

Mountain asked Loutit about the depths of the proposed drill sites for 367. The shallowest water depth is 200 m. Mountain commented that this is a good beginning for the sea level story for this kind of margin, with the hope that there will be shallower sites drilled at some point. Even if sites are not ideally located for reconstructing sea level history, it is important as it opens window for future studies on sea level in the area. Sager questioned whether GAB is the best place to study sea level changes as there have been a number of other carbonate legs proposed or drilled. Loutit answered that this is best place for evolution of cool water carbonates,

and the architectural response of a margin in a cool water setting. Regarding sea level, this is one of the margins that needs to be looked at for sea level history and stratigraphic response.

Sedimentary and Geochemical Processes Panel (SGPP)

Bill Hay, panel chair, presented the highly ranked proposals of SGPP.

- **ADPG 1** - This proposal address a fundamental scientific problem: when one compares the two proxies for sea level changes, $\delta^{18}O$ and coastal onlap curves, they are out of phase. The best way to resolve this is to asses how much ice was on Antarctica during the critical time intervals. Five critical areas have been proposed by the ANTOSTRAT group,; these areas have been identified to represent outflows of the major ice streams draining the W. and E. Antarctic ice sheets and the Antarctic Peninsula. The Antarctic Peninsula has been selected to be the first leg for two reasons. First, it is located at the lowest latitude and should be the most sensitive to climatic variation. It should have a good climatic record as it has a relatively thick sequence of glacial material. Second, it also has an excellent series of drifts, which arise as the ice sheet dumps material at the edge of the shelf, and sets off slumps and turbidity currents. The slumped material is then deposited downstream. The resulting drifts should provide detailed sedimentary records at times when the ice is at the margin, resulting in a sequence stratigraphy related to ice history. This is a working hypothesis and needs to be tested. This first leg in Antarctica is designed to determine the nature of slope, shelf and rise sediments, look at drift sediments, and look at a Holocene section. Questions include: does the Antarctic Peninsula become completely deglaciated from time to time (presence of terrestrial pollen or not), how many cycles are there per unit time, is this in synchroneity with Northern hemisphere glaciation? This area should be very sensitive to climate change.
- **Nankai Trough (445)** - This is one of two classic end-members for wedge areas (the other is Barbados). This proposal is to study the sedimentary prism and it focuses on fluid flow within materials of different characteristics along two transects. The eastern transect has low wedge taper, the western transect has high wedge taper with reverse polarity representing changes in porosity and pressure. Fluid modeling for both transects has been done, and drilling is proposed to test them quantitatively. Two legs are proposed: the first to recover core, and the second to recover more core and emplace CORKs. Fluid flow can be followed using changes in components in fluids, such as chloride; modeling has already tried to reproduce the chloride distributed at Site 808.
- **Great Australian Bight (367)** - Drilling in the Bahamas has elucidated how warm water carbonates respond to sea level changes. SGPP had already envisaged a comparative study of cool water carbonates. These carbonates have lots of analogies with Paleozoic carbonates. The sedimentary architecture of GAB is one of ramps, which seems to be characteristic of carbonate platforms through much of geological history. It is a unique situation that will have a unique sea-level response, and will be interesting to see if there is a correlation with the Bahamas.
- **Mariana-Izu (472)** - This is a mass balance exercise to look at crustal fluxes in subduction zones in the simplest possible situation where everything is being subducted and there should be no complications due to refluxing. The potassium content of the volcanic rocks at Izu and Mariana are different, so the question is why this occurs in such a simple system. This can be answered looking at materials being subducted along flow lines. Two sites will allow the calculation of a mass balance.

ADPG 1- Mix commented that proponents of ADPG1 need to consider some realities about the timing. The proponents want 60 days of drilling with a start and end in Punta Arenas, but this is not possible as Cape Town is the choice because the ship has to go in that direction. They will possibly lose 10 days or more, and it is important to evaluate whether the science is viable taking that reality into account. Was logging included in time evaluations? This is important as there is likely to be low recovery in tills on the shelf sites. Goldberg commented that logging plans are in the proposal but he did not know if this estimate includes those times. Mix asked if a viable climate record can be generated from volcanic turbidites, planned to be recovered at the Bransfield Straits site, and commented that the same site is in proposal 453 with tectonic objectives. Hay said that that is the site the group wanted as it was considered the best place to achieve best climate record. Humphris commented that proponents of 453 were invited to attend the ADPG, but were unable to go. Kudrass agreed with Mix's comments, and commented that deep sites should be moved to the highest priority if possible. Four sites are on the shelf; the third one should be moved further out so achieving a record from drift sediments that can be traced back to shelf. Mountain commented that it is not possible to determine whether the whole of Antarctica was ice-free purely from the presence of pollen. Hay responded that the only area that would be known for is the Antarctic Peninsula but it is climatically the most sensitive. Mountain also agreed with Mix that climate signal is lost in volcanoclastic sediments. Sager questioned how a record from glacial/deglacial can be achieved if the deposition is not understood. Hay replied that a well-developed model exists, but has not been tested. Kudrass commented that this has been tested in part, but needs to be refined. Brown pointed out the disjunction between the onlap curve and the oxygen isotope curve. He felt the Antarctic Peninsula is not the area to get the best record to resolve this, as it seems to be the least sensitive area to these changes on the Antarctic land mass. Hay replied that SGPP felt this was the best place to start as the records will be complete back to the Pliocene, and this record will reveal whether there is variability in the record, and the timing of this variation. Natland asked which sites are included in SGPP rankings, as ADPG started as a combination of different proposals. Ellins clarified the history of the ADPG proposals. Pearce commented that the original DPG had a different combination than this program. Humphris commented that Hay had presented the list of sites that are SGPP's top ranked proposal, and they are dominantly W. Antarctic Peninsula, a Bransfield Strait site, and one in the Palmer deep.

Nankai Trough- Brown pointed out that there are some distinct differences between the western and eastern transects. The eastern transect has a negative polarity reflector at its base, possibly relating to a change in porosity. This is due to the lack of sand bodies down in the lower sections so it does not dewater and keeps higher pore fluid pressures and therefore has lower taper. However, in the western section, there is some sand which drains the basal shear zone in the wedge. This leads to higher basal stresses and the higher taper. Drilling will allow testing of this hypothesis. Sager commented that this was another in a series of wedges that have been drilled, and asked what is the overall plan, and whether this is a key place. Hay responded that the architecture here is simple enough that it provides the best chance of coming to a quantitative solution. Kudrass thought this was a two leg program, but asked if it could be reduced to one leg. Hay said proponents would prefer not to put CORKs in, but get sufficient data to be as quantitative as possible. Mevel asked how the other proposal in the system to drill in this area (French-Japanese), which is still immature, fits in the project. Moore said it deals more with emplacement of an oceanic crustal sliver, so it is really a proposal with different objectives.

Great Australian Bight- McKenzie said this proposal provides a unique chance to look at this environment and it is fundamental to study controls on cool water carbonates systems.

Tectonics Panel (TECP)

Robertson presented the highly ranked proposals of TECP. The large number of TECP-related proposals is due to the fact that the ship will go again to the West Pacific. He pointed out that several proposals in the systems are addressing themes of interest to LRP.

Woodlark Basin (447) - This is a key initiative in the Long Range Plan, and is dealing with rift and extensional boundaries processes. The main objective is to characterize the *in situ* properties of an active, low angle fault zone, and to determine the vertical motion history of the downflexed upper plate and the unloaded lower plate. Woodlark is ideal as it is a young and active system. Drilling will focus on two traverses across the boundary. This will be used as a fundamental model for rifting processes that will be widely applicable. The proponents want to see a CORK installed at one site, but is not essential to achieving the objectives. A two-leg program could be designed to accommodate CORKing if it could not be accomplished the first time.

- **Tonga Forearc (451)** - This proposal is also mature and ready to go, and there is also strong interest from LITHP. This proposal addresses the study of fundamental processes connected with subduction geodynamics, arc evolution, and deformation processes at a convergent margin that is not undergoing accretion. There are several linked objectives of interest for both LITHP and TECP. The proponents wish to investigate the history of the arc and forearc on several traverses to look at the temporal evolution involving oblique opening and oblique collision of the seamount. There is extensive site survey data and a successful cruise this summer has added important results. Proper packaging of the final leg still requires fine tuning.
- **Taiwan Collisional Arc (450)**- This proposal, dealing with collisional processes in orogeny, is closely related to the LRP. In this area, a major magmatic arc system is in the process of progressive diachronous collision with the continental margin of China. Hence this provides the opportunity for fundamental insights into the way arcs collide with, and are then accreted and incorporated into, continents. This proposal is mature and ready to go, and a strong proposal. TECP is very interested in the tectonics aspects and fluid flow as it offers fundamental insights into how arcs collide and accrete with a continent.
- **West Pacific Seismic Network (431)** - TECP is mostly interested in structural and tectonic aspects that aim to fill gaps of coverage in W. Pacific zones, thereby yielding information to resolve fundamental tectonic problems of this area. These sites are also highly relevant to seismic hazards.
- **Nankai Trough (445)** - Hay presented SGPP's interest in the fluid flow aspects but there are also structural interests. This location is ideal to produce accurate cross sections where the wedge can be restored to learn how wedges evolved through time. Modeling has been carried out to evaluate the nature of structures within the decollement and other parts of the accretionary wedge. Drilling would provide ta test of the model.

Woodlark - Shipley commented that Woodlark is one of the few areas to study active extension. Natland asked what penetration of the fault would reveal. Roberston replied that it would provide a detailed lithology, and the logs would help characterize the physical and hydrogeological properties of the decollement zone. Pearce asked if there is any chance to look

at magmatism as well. Young rocks were recovered from Moresby Seamount, as well as some older rocks recovered by dredging, but characterizing this is second priority. Brown said a key question is how low angle faults can move without high pore fluid pressure. Roberston said that proponents would love to see CORKing, but he thinks is not fundamental to characterizing this environment. Shipley said that CORKing could happen at a later stage, but then it takes only three days, although it requires triple casing.

Tonga - Natland commented that two sites are close to older ones on the Pacific plate, and he asked what specifically will be learned from the new ones. Roberston said TECP wants to see the age, stratigraphy and deformation history to compare with other sites. Pearce said that the new ones are structural reference sites to determine the nature of forearc sediments before the ridge hits. Larson commented that the dating will be very hard as biogenic material is absent. Sager asked what is new here compared with Mariana rifting. Robertson said that here the theme is interaction with the Louisville Ridge, and the margin is undergoing subduction erosion and loss of materials.

Taiwan - Shipley commented that it is not quite ready for drilling.

Lithosphere Panel (LITHP)

Ludden went through the top five ranked proposals. He pointed out the LITHP ranked DCS as 0 because they didn't want to rank it with the other proposals, but wanted to indicate that they were willing to sacrifice a Leg if necessary to test it. ADPG was discussed but not ranked. Ludden chose not to discuss the specific aspects of each leg, but rather focus on why the panel felt they wanted to drill them.

- **Kerguelen (457)** - There are two main models that exist to explain the formation of LIPs: 1) the ridge-plume interaction model, and 2) anomalous events that fall outside of our current ideas on mantle convection. LIPs can be considered as mantle mixing experiments when pre-LIP, during-LIP and post-LIP mantle can be investigated using isotopes. LIPs are important in the growth of continental crust, so there is a need to understand their formation. In addition, they may have had a major environmental impact. The strategy for understanding LIPs is completing transects to understand the time/flux history of a LIP, followed by some deep holes.
- **ION (431+ NERO)** - This proposal offers the potential to use borehole seismometers to image deep mantle convection. LITHP strongly supports drilling of these sites, some of which could be done during transits.
- **Tonga (451)** - Themes of interest to LITHP are the initiation o subduction, the nature of early arc volcanism, the origin of supra-subduction zone ophiolites, and physical and chemical controls on arc magmatism. Using ICP-MS, it is now possible to use the volcanoclastic record to characterize the evolution of an arc. Another objective is to test the ophiolite model.
- **Mariana-Izu (472)** - LITHP is trying to understand global thermal and geochemical fluxes. A new group, GERM (Geochemical Earth Reference Model), is trying to understand fluxes between Earth's major reservoirs. Mariana-Izu is part of a series of experiments aimed at looking at fluxes at margins, understanding the nature of altered crust in subduction systems, and the input and output and recycling of various components. Ludden also pointed out that there are some distinct chemical differences between the Izu and the Bonin Arc, suggesting differences in material going down the subduction zone.

Kerguelen - Sager commented that LIPs are one of those first order problems where ODP drilling can make a big difference in the next 5 years. He felt the proposal is ready and it is time to schedule it. Natland was interested in knowing how drilling is going to extend what is already known with a series of short penetration holes. Ludden said the purpose is to better constrain the various components in terms of volume/flux relationships between the various reservoirs. Sager added that there were huge eruptions in a short time, they have different ages, but there is question of how to date them. However, we need to get a handle on flux of magma. Pearce asked why not drill a LIP in a more geographically convenient location. Larson said that Kerguelen and Ontong-Java are the two biggest volcanic events remaining in the ocean basins. The timing of these two LIPs is fundamental. They are close in time and exhibit some bimodality in their ages: an initial pulse, a hiatus for 30 Ma, then a second pulse. It is important to characterize age/volume relationships by drilling holes. Ludden said that this should be considered the first of several studies of LIPs that will occur over the next 10 years.

ION-NERO - Mevel said she talked to Montagner who will propose a cruise to emplace a seismometer for a year, starting in 1999. Johnson raised the question of whether a seismometer in a deep hole is better than on the sea floor, but nobody really knows whether the signal/noise ratio will be better. Mevel said that Montagner reported noise had decreased after five days in an Atlantic experiment, suggesting that hopefully after one year it would be even better. Larson asked Suyehiro how coupling is provided between the seafloor and the instrument. Suyehiro responded that different countries use different systems. Johnson said that historically these types of experiments were tied with the magnetics community, who were going to install magnetic observatories, but this aspect has been removed. Mevel said that the magnetics community does not want to put instruments in deep holes, but rather on the sea floor.

Tonga - Pearce said that good summaries were given already by panel chairs. He felt that the link to mantle dynamics needed to be pointed out. Natland pointed that he appreciated the fact that the proposal talks a lot about rocks and parameters that can be measured and linked to structural evolution.

Izu-Mariana mass flux - Natland said there are two major objectives: 1) to constrain geochemical mass balances, and 2) to find out what the Mesozoic sediment and crust is like before it is subducted. Pearce supported the proposal, but was puzzled in that the goal was to contrast the Izu-Bonin and Mariana arc, even thought there is no site where the crust would be subducted beneath the Mariana arc. Larson said that the main crustal component that is missing is the Jurassic component, and the only place that it is guaranteed to be recovered is Hole 801C. Brown commented that the inputs are very heterogeneous, and only two holes will be used to characterize vast areas of crust. Natland said the calculation does not rely only on two sites but also on dredge hauls. It is important to realize that we are at the beginning stages of characterizing the inputs. In addition, it is not just a matter of looking at solids, but also at fluids, which could be coming out of the subducting slab. Brown questioned whether more holes are needed because of various alteration processes. Mevel said that the geochemical community wants to take a global fluxes approach, and this is one step forward. Fryer said that the most compelling argument is that because there is so much information on sedimentary cover and we know there are complexities in crust near ridges, going far enough away from them will give a critical part of the entire story. Deeper penetration is needed to address variability in that part of crust. That is the first order question, then other shallower holes can be drilled to address the heterogeneity issue.

2. Site Survey Considerations

Srivastava reported on their review of proposals included in the Prospectus. In summary, all highly ranked proposals have rankings better than 2B, with the exception of Kerguelen (see Appendix 11). Ellins commented that the French cruise to Kerguelen has not been scheduled yet, but reported that Dominique Weis said there are enough proposed sites that they can eliminate some of the sites if the data are insufficient.

3. Logging prospectus

Goldberg referred to the prospectus in Agenda Book, and said it contains 17 proposals that were reviewed by DMP and proponents. NERO was added later, and a Prospectus for it was distributed at the meeting. With the intent of reducing the work load, LDEO recommends moving the building of the Logging Prospectus to the proponents, as part of the proposal process. New tools are used in several of the proposals. Goldberg gave a presentation on the ARI tool, which is a resistivity imaging tool that substitutes for the laterolog. This is an oriented imaging tool providing 1m-scale resistivity images that can pick out lateral heterogeneity. This tool was recommended for a number of the tectonic legs and high-resistivity basement holes. Goldberg showed spreadsheets of special tool deployments, showing tools requires and the costs associated with each (Appendix 12). VSP was recommended for Legs with sequence stratigraphy objectives.

Sager said that PCOM wanted to know how much extra cost is involved, and pointed out that it is important to consider this to be aware of limitations related to costs. Humphris said that it is clear that the Program cannot afford three legs of LWD in one year. Hay commented that ADPG was not aware that LWD was requested. Sager said that for Woodlark Basin, LWD was advisable, but not necessary; the same is true for Nankai. Humphris said that by one order of magnitude, this is the most expensive logging activity we have and that, in determining the schedule, PCOM should bear in mind that Antarctica does not need it (as the ADPG was not even aware of it), and that LWD would be beneficial for Nankai but is not necessary. The need for the Engineering tests is obvious. Shipley asked why is this obvious and said the LWD Engineering leg needs to be discussed. Brown asked if there is any way to make LWD cheaper. Goldberg answered that it is possible, but is dependent on leg length and number of holes drilled. McKenzie asked if the GHMT tool is really necessary for all those legs. Goldberg said that if it became a routine tool, the costs would go down a bit.

4. Logistics and Budgetary Considerations

Francis showed a matrix which summarized logistical and budgetary constraints (Appendix 13). He reviewed the sources of information for weather windows, ice, and tropical cyclones (which would affect legs such as Nankai). He said that another factor to be considered is heave conditions. Since the experience of Leg 173, limitations have been established for shallow water drilling. There is a limit of 1m for 75-300 m water depth, and 2 m for 301-650 m water depth. Costs are based on extimates above a "standard leg". Support vessels for Antarctica for Leg 113 cost $1.197 million and $0.868million for Leg 119.

Francis went through the proposals reviewing what is needed for specific legs, and what is the best time-window. For the South Atlantic paleoceanography leg, the best time is December-February, but there is no ice problem. For the West Antarctic Peninsula, the best month is March for ice conditions, but for the weather is December-February. An ice boat will be

needed. The area is exposed to large swells, and there are four sites in shallow water so there might be heave problems. DSDP sites in the area had big swells, and gave up because the swells were too big. Francis said the ship has to leave the area before the end of March.

For Kergulen, Francis pointed out that it is in an area where in July and August average wave height is very high, and the risk of having very high waves is too dangerous. However, an ice boat is not required. There will be some heave problems in two of the shallow sites that may preclude them. He questioned whether it is sensible to be considering a deep hole in an area of the world where the chance of rough seas is high.

Francis said that summer cyclones could be a possibility for Woodlark, although it is probably close enough to the equator that it might not be a problem. The best time to schedule SW Pacific Gateways is from October through February, and if sites in the north were drilled first, the leg could even be scheduled starting in September. To avoid summer cyclones, Nankai should be scheduled from March to June. However, a major problem associated with this location is the presence of the Kuroshio current. Francis questioned the wisdom of planning legs with long casing strings in areas with strong currents, as high currents can induce vibrations. Natland said that current intensity fluctuates and meanders in and out, and this could be taken into account when planning. Moore reported on some work to be presented at AGU by the Japanese. They spent the last three years doing weekly transects with ADCPs and calibrating that to satellite data. They feel they can predict the exact meandering of the current. Francis said that West Pacific Geophysical Network has to be scheduled in May-June to avoid tropical cyclone season. Great Australian Bight has to be scheduled from November through March to avoid high waves. In addition, there are some heave problems on some shallow sites that have to be considered. Cyclones have to be avoided by scheduling Tonga from May to December. For the Taiwan area, even if it is not scheduled this time, Francis pointed out that it is also is necessary to avoid the cyclone window, as well as current problems similar to Nankai. Fox added that another point to be considered regarding costs is the "distant ocean tax". The costs of operating in the Pacific are approximately $2 million higher, due to logistics, travels costs, transit, fuel costs, etc., and these additional costs are not in the figures estimated for drilling. Larson pointed out that avoiding typhoon season is very important, and he felt that mid-March to early August is a reasonable time window. Mountain said that the information compiled by Francis provided useful and necessary information to help make a good decisions.

5. FY '98 Science Program Discussion

Humphris asked if there was any further input on proposals before conflicted people are asked to leave. Mahlon suggested that PCOM does not need to consider safety when scheduling, as PPSP can do this after the schedule is decided. Falvey discussed costs of general operations for '98, and said they will be much higher than in the past by approximately $2 million. Falvey showed the list of projects for FY'98 that included the dry-dock, continuation of projects already underway, and proposed leg-related projects (e.g., LWDs, special logging tools, ice boat, etc.). With the most optimistic schedule scenarios, there is a likely budget over-run of $900K. He put the cut-off at $4 million, which implies that drilling an Antarctic leg will result in insufficient funds for both Somali Basin and Woodlark. Carter asked if there were any other funds that could be tapped to support an ice boat. Hay responded that he didn't know. Carter also pointed out that for proposal 441, July-August is another weather window. Humphris said that PCOM needs to come up with a couple of scheduling scenarios, and then the implied costs will be evaluated. Kudrass asked how the additional $2 million related to operations in distant

oceans mentioned by Fox fit into Falvey's budget. Fox responded this was embedded in the A-base costs, and that the "distant ocean tax" may be reduced by about $5-600K due to the reorganization and some cost savings.

Humphris opened a discussion on other proposals within the Prospectus. Natland wanted to discuss the Somali Basin proposal, as he was watchdog for it, and it got no mention from the panels. He felt it provides the opportunity to move beyond the LRP and that it addresses important Mesozoic objectives. Large portions of DSDP dealt with Tethys objectives (black shales, etc.) and he felt that, with the technology now available, there is a better chance to achieve the objectives. He called on to Larson to repeat his words spoken at USSAC. Larson said this proposal is important to asses the connection between the two types of Mesozoic oceans: the Tethyan North Atlantic Ocean and then everything else. The facies differences are remarkable: the Tethyan had a very carbon- and carbonate-rich ocean, whereas the Pacific is carbonate-poor. Somali Basin is the best place to understand the difference between those two systems. McKenzie said that the reason this proposal was rejuvenated by SGPP was because PCOM asked panels to identify proposals with deep holes where good science can be done. Loutit said the reason why Somali was not ranked highly by OHP is because there was no site survey, but the science for Mesozoic objectives is valid. Francis pointed out that the LRP states that in phase 3 a number of deep holes will be drilled, and it would be good to start early to achieve some experience. Robertson said TECP supports deep holes, but other sites should be considered. Falvey said that all other areas will have source rocks, while in the Somali Basin this risk is very low. Riser and BOP would be needed for deep holes other than Somali.

Humphris asked the conflicted members to leave and reminded the remaining PCOM members of the motion addressing voting on proposals (PCOM motion 96-1-9). The first step is to go through the proposals in the Prospectus and to eliminate those that are not feasible for one reason or another. The next step is to try to rank the proposals on the basis of science. That way the new SCICOM will have a scientific ranking, thereby smoothing the transition to the new structure. Some proposals may not get into the schedule because of logistical or budgetary constraints. Kudrass said that if you start to exclude proposals then it will kill the long term perspective. Humphris said that there are a lot of highly ranked proposals, but not all can be scheduled, but PCOM should pass on to SCICOM a list of highly-ranked science. Humphris suggested that PCOM nominates which proposals should be considered for scheduling. At this stage, based on the previous discussions, ADPG2, ADPG3, DCS Engineering Leg, and LOI 72 were taken out of consideration. Either a consensus of a vote was called for on each proposal with the following outcome:

Proposal Title	**Vote to consider for the FY '98 Schedule**
079	4 yes, 8 no
367:	yes by consensus
431:	yes by consensus
441:	yes by consensus
445:	yes by consensus
447:	yes by consensus
450:	no by consensus
451:	yes by consensus
464:	yes by consensus
457:	yes by consensus

472:	yes by consensus
495:	no by consensus
508:	yes by consensus
ADPG 1 (452, 453, 503, 483)	yes by consensus

Proposal 079, 450, and 495 were dropped from consideration at this stage. During this process, the following discussion took place. Natland asked for clarification on LOI 72 and wanted to know whether it is five day exercise? Humphris confirmed this and said that it was considered as a contingency for FY '97. Natland asked if it could be in FY 98. Goldberg asked to comment, and said it could be deployed on Nankai as a part of the package, or the tool can be deployed as a test somewhere else in a hard rock environment. It was originally proposed for the MARK area in the FY '97 scenario as a generic testing leg of an LWD tool. At Nankai it would be deployed as part of the tool package plan, not as a test. Goldberg clarified that the test would be on hard rock and it could be at 735B or NERO in FY '98. Natland reminded PCOM of the cost implications associated with which port is chosen, as the tool must be shipped to and from the ports. Humphris proposed that it be removed from consideration; this was passed by consensus. Pearce noted that Southern Gateway is not highly ranked. Humphris noted that PCOM did not discuss the proposal at all. Mountain (watchdog) noted that there is some controversy because of the differing objectives (paleoceanography and tectonics) and that it would not hurt to cross this proposal off the list as the proponents need to revise it. This was agreed by consensus. Natland reiterated the importance of Somali Basin for a deep hole and the geographic placement of this site. Humphris suggested that it could be taken out of the ranking and then a specific statement as to its importance as a potential site for a deep hole could be made. McKenzie disagreed and said that would eliminate the chance to ever drill it. Natland asked about the goals and objectives of the engineering group at TAMU for this leg. Francis responded that the primary goal is to see that the system works. Fox added in light of the discussion on the need for riser drilling, engineers at TAMU want to test the capabilities of the TAMU system. Francis said the *JOIDES Resolution* has never been tested to its limits. Pearce noted that it is not site survey ready, and the proposal was not looked at by SSP. Natland noted that a site was already drilled very close to the proposed one, and that a site could be located on an MCS line. Brown said that the science is not up to doing this kind of hole. He wanted to see better science for the money spent and preferred consideration of another site. Since a consensus could not be reached, PCOM voted, and it was dropped from further consideration on a vote of 4 to 8.

Regarding Mariana Izu, Mountain noted that this is one proposal that has a ranking from all four panels and is truly multidisciplinary, but he questions whether it is an efficient use of ship time to have competing objectives on the same leg. PCOM agreed to keep it in contention. A ballot was then held on the eleven remaining proposals. PCOM members ranked the proposals from 1 (high) to 11 (low) on signed pieces of paper that were kept as part of the records for the meeting. The results are as follows:

Ranking	Proposal	Score	St. Deviation
1	464	2.83	2.5
2	447	4.58	2.7
3	457	5.33	3.6

4	472	5.75	2.5
5	367	5.83	3.5
6	ADPG 1	5.92	3.4
7	441	6.33	2.2
8	431	7.00	2.7
9	451	7.42	3.0
9	508	7.42	3.4
11	445	7.58	2.7

Fox commented that PCOM cannot include both Kerguelen and ADPG 1 in the first year. Humphris added that PCOM cannot schedule two high latitudes legs without moving the schedule back because of weather constraints. Francis noted that Kerguelen cannot follow Southern Ocean Paleo, as it will be too late in the season to work at Kerguelen. Fox noted that NERO could be done on a transit across the Indian Ocean. Humphris wanted PCOM to give operators and JOI a clear indication of what they really want in the program, because there are many drillable proposals, and the standard deviations show that many group together in the ranking. Sager said strong guidance is required from PCOM because there is a clear top and clear bottom ranked proposal and all the rest are grouped together. In addition, he noted that this is not a strict scientific ranking because one cannot help consider geography. Humphris requested that TAMU come up with some scenarios for the FY '98 schedule that incorporate highly ranked proposals and show how the high ranked, high latitude proposals could be accommodated in the future.

E. JOIDES Panel Reports and Action Items

1. Panel Chair Reports

PANCH

Loutit reported on a series of recommendations from the PANCH meeting:

- The new JOIDES Science Advisory Structure- OPCOM should have two main objectives: 1) resolve short-term scheduling issues (1 meeting/year) and 2) advise SCICOM on long-term technical requirements (1 meeting/year);
- PANCH emphasizes the need to maintain continuity and consistency in the evaluation system for proposals that have already been highly ranked by thematic panels prior to the transition to the new advisory structure;
- PANCH endorses the IHP recommendation that JANUS Phase II be implemented as soon as possible, including:
  - integration of structural (and related sedimentary) data acquisition
  - the migration of biostratigraphic data to the JANUS system
  - the continued integration of CLIP into JANUS;
  - improved quality digital imaging for the hard rock community
- Core/sample Curation- PANCH endorses the effort to develop new guidelines for sampling and curation and asks that these guidelines be made available to the ODP community as soon as possible during 1997;
- Shipboard collaboration approval- All arrangements must be conveyed formally in writing to the Staff Scientist (Project Manager) by the end of the leg. Co-Chief scientists will ensure that

all shipboard agreements are completed. Responsibility for adjudicating of any ensuing conflicts that can not be dealt with directly by ODP-TAMU rests ultimately with JOI. Questions were raised as to what the issue was. Fryer clarified and said that this is in response to some problems that have recently occurred on board the ship involving scientists who informally agreed to collaborate and later on changed their plans. Humphris explained that in the PANCH recommendation, it is suggested that a record of such agreements be kept with the Staff Scientist, with the Co-Chiefs having oversight.

- 5 Yr. Plan- PANCH recommends that PCOM consider repackaging the presentation of the plan in the following manner:
  - put less emphasis on post 1998 schedule by removing dates;
  - emphasize key concepts/ideas and sequence/duration of generic legs post-1998;
  - insert graphics into text and use them more effectively.
- – PANCH should continue to meet prior to the SCICOM once per year.

PCOM Motion 96-3-6
PCOM endorses the PANCH recommendation that all shipboard collaborative arrangements must be conveyed formally in writing to the Staff Scientist (Project Manager) by the end of the leg. Co-Chief scientists will ensure that all shipboard agreements are completed. Responsibility for adjudication of any ensuing conflicts should be dealt with by the CAB, and rests ultimately with JOI.

Proposed: Mevel, Seconded: Shipley *15 For, 1 Absent*

SGPP

Hay reported that their fall meeting was in Nancy, France. He noted that the proposal to drill in the Barents Sea was confusing to the panel as it appeared to propose to do what had already been done. He was unclear as to whether it was being proposed that a Russian ship be used for this endeavor, and he felt that this should go to JOI for assessment.

Regarding the SGPP responses to queries from PCOM, Hay said that of the four people that SGPP selected to attend the interim SSEP, three certainly will be able to go. He also urged PCOM to find a fluid flow person to serve on the panel, and Jean Bahr was considered as a possible candidate by SGPP. SGPP did not suggest anyone to serve on the JOI Publications Steering Committee as Bjorn Buchardt has already been nominated as a member of the committee. Humphris noted that Buchardt's name was sent by the JOIDES Office to JOI. Hay said that suggestions for PPGs were listed in the Panel Minutes.

SGPP presented four motions:

- Publications: SGPP is concerned with the plan to drop any printed version, and asks that some kind of printed copy be retained.
- Antarctic DPG: SGPP endorses the study of Antarctic glacial history and supports a first leg as a test of the concept, but does not necessarily agree with the proposed order and schedule of subsequent legs as given in the DPG report.
- Antarctic DPG: SGPP is not clear that 452-Add 2 in its entirety is consistent with the main objectives of the Antarctic Program to study glacial history and sea level change, and requests from ADPG a drilling plan with a description of the goals for all of the sites.
- CORK: SGPP has always viewed CORK experiments as a high priority, and asks that ODP makes a commitment to maintain the equipment, unless it become evident that the CORK site is not adequate to achieve the desired objectives.

Regarding the Antarctic program, Hay explained that the reason for the second motion is linked to some problem with the Bransfield Strait site, which has a tectonic objective in addition to a paleoclimatic objective. Concerns were expressed that a group of proponents from the original Bransfield Strait Proposal 453 may have been excluded from the addendum to 452 (Barker) in which the Bransfield Strait site was included. Humphris asked if the concern expressed by SGPP in these two motions suggests that the panel would like to see the ADPG meet again. Hay said this is not what the motions say. Humphris asked again if this is one way for SGPP 's concerns to be addressed. Humphris said this will be revisited. Hay also mentioned the Hudson Apron proposal (476). The panel reviewed this as a contingency plan for NJ if time becomes available if the hammer drill system does not go ahead. In a letter that Hay has received here at this meeting, he had been told by Hudson Apron proponents that some of the HAT sites are coincident with NJ alternates (Leg 174A). He reviewed the scientific objectives of this proposal. SGPP supported this program as a contingency plan.

TECP

Robertson reviewed TECP activities over the last three years and finished by showing a tectonic plan that TECP would like to see drilled in the future (see Appendixes 14-16). Roberston expressed his thanks to ODP, and thanks to the outstanding TECP members for their years of service to the program. Robertson noted that there are many new proposals in the system with tectonic objectives. In the long run, TECP felt that there will be a need for two ships for tectonic objectives, one is a *JOIDES Resolution* type, the other is a riser ship. TECP has also supported DCS and similar types of engineering projects, and *in situ* measurements of fluids and gases, and supported collection and archiving of structural data. One item of concern for TECP is the overall thematic panel balance in the new structure. TECP wanted also to be sure that the "external " groups (global geoscience programs) are not able to unduly influence ODP drilling, and that the SSEPs are evenly balanced so that they do justice to the interests of the community as a whole.

Roberston then reviewed the three panel recommendations to PCOM:

- JANUS - TECP recommends that the integration of structural (and related sedimentary) data is fully completed within JANUS phase II, or equivalent.
- Deep Hole -TECP recommends to exclude Somali Basin as a candidate for a deep hole as it has no scientific merit. Alternates of scientific interest to TECP are the Nankai upslope site and Woodlark Basin.
- DCS - While supporting the concept of a DCS engineering leg, TECP believes that an alternate to 735B may well fit the science drilling plan better, i.e., Nankai slope; Woodlark Basin.

Regarding the JANUS recommendation, Robertson said he is very concerned that the momentum of TECP in this area should not be overlooked in the new system. Regarding the deep hole recommendation, TECP felt that there are alternates to Somali and suggests convening a small group to look into this carefully, taking into consideration the safety factor.

Robertson said that TECP has three suggestions for PPGs: (1) downhole measurements and observatories, (2) conjugate margins, and (3) seismogenic zones. In summary, TECP wanted to see a seamless transition to the new structure, and suggested these PPGs produce a realistic plan to 2003.

LITHP

Ludden presented a recommendation that was not included in the LITHP minutes. This regards the drilling of ION holes, which is considered to be a high priority by LITHP. He said the panel feels that mini-legs to drill ION holes should be coordinated by PCOM when the ship schedule takes it near high-priority ION sites.

The LITHP recommendations tp PCOM were:

- Digital imaging of core - LITHP was not satisfied with quality of the hard rock digital-image-based system of the JANUS data base (presented at their meeting by the TAMU representative) that represents the "backbone" of the hard-rock community's requirements. The need for this system in the JANUS program and should not be forgotten.
- DCS system- LITHP strongly supports the development and testing of DCS for future hard-rock legs and for use in areas of difficuolt lithologies (cherty sequences, hydrothermal systems, etc.). The most reasonable site for such a test is probably at site 735. However, the panel stressed that such testing should be on a bare rock, low angle site, with reasonable access to a port.
- Comments on the transition to the new review process - Concern was expressed regarding how the new proposal review will be handled. In particular, how soon will proponents be advised that their proposal is going for mail review, and how much time will a proponent be given to rewrite the proposal before review? LITHP stressed that JOI or JOIDES should inform proponents as soon as possible of the changes in the review procedure, providing proponents and reviewers clear guidelines on the new review procedures.

Ludden said that the 5 Yr. Plan was discussed, and LITHP was pleased that their plan was used model for the new structure.

At end of the meeting LITHP came up with two types of PPGs: short-lived and long-lived ones. One short-lived one should be on world class ore deposits- meeting with mining experts as participants. A short-lived group on fluxes (part of GERM) is needed to determine what should be measured. Mix said that the short-lived PPG sounds like a workshop. A brief discussion ensued regarding the differences between WGs, PPGs and DPGs. Humphris noted that PCOM will revisit this when EXCOM concerns are addressed. Natland said that a DPG was always meant to produce a drilling plan from several proposals, and short-lived group should have different name from a DPG to avoid confusion.

OHP

Loutit presented six recommendation from the panel:

- CLIP software development - OHP voted to further endorse and recommend continued support for the development of CLIP (Core-Log Integration Platform) software. The two products currently in development, Splicer (core-core data integration) and Sagan (core-log data integration) data integration software are viewed as essential shipboard and shorebased research tools for Ocean History drilling objectives. The panel supports the incorporation of Splicer and Sagan data products into the JANUS database and recommends that the programs be enhanced to access data directly from the database, and that ODP assume a proactive role in insuring that these CLIP software products are compatible with current and future modifications to the shipboard computing and network facilities.
- Recommendations to PCOM - The OHP endorses the 2 October 1996 recommendations to PCOM on (1) the new ODP advisory structure, (2) JANUS, (3) new publications, and (4) printing and distribution of ODP IR and SR volumes for archival purposes.

- Approval of shipboard collaborations - OHP does not endorse the IHP recommendation that any and all collaborations between shipboard scientists be approved, monitored, and adjudicated by the Co-Chief Scientists of the leg. Consequently, the OHP recommends that an independent body that can respond quickly to leg-based appeals have ultimate responsibility for adjudicating collaborative arrangements between shipboard scientists.
- Subsidized publication costs- ODP SR volumes constitute a primary resource for much earth historical research. Resources of particular importance include (1) microfossil studies that document taxonomic concepts of stratigraphic significance, and (2) site-specific stratigraphic studies. OHP recommends that PCOM consider subsidizing costs of publishing such studies in the open peer-reviewed literature (i.e., by payment of page charges for taxonomic and stratigraphic studies).
- JANUS - OHP supports the migration of existing data to the JANUS database system. The migration of biostratigraphic data should be a high priority task.
- Leg 175 - OHP is aware that coring depth restrictions imposed due to safety considerations in the North Angola Basin may limit the scope of sites in this area to Quaternary/upper Pliocene. This will nevertheless provide important new information and the southern transects retain a sufficiently broad coverage to provide a robust reconstruction of the evolution of the Benguela current system. This leg remains a top priority for OHP. It has been considerably strengthened by the addition of high resolution sites in Walvis Bay and has the full support of the panel.

Loutit said that OHP has prepared an LRP implementation document and this should be addressed and updated every year. This will mean that every year accomplishments will be listed that can go up through the system to the ODP Council. He noted that he has spent the last three years on ODP Council and has observed the great disconnect between ODPC and those conducting the science of the program. Mix 's presentation last year began to make a difference with respect to the way that ODPC views the program . He felt that the SCICOM Chair must continue to do this, showing accomplishments and plans and their socio-economic consequences, and must force the panels to do this exercise also. All the information from the panels cannot be presented to ODPC, but only the most salient points. This is necessary as they are bombarded constantly by other groups looking for money. OHP has had a very successful year with 165, 166, and 168 in FY '96. Loutit stressed the need to pick out the significant issues and boil down the important items from the panel perspective. He said Mix did this and with his presentation was actually able to interest the Council and have them actively participating in the program giving feedback.

SSP

Srivastava gave an overview of last year's issues dealt with by the panel. He discussed the need to have three-day meetings and requested that JOI fund an extra day for proponents to spend looking at data on their own at the SSDB. The next meeting will be in Japan, and Srivastava noted the value of having meetings outside the US. He said SSP had concerns about the new structure. Srivastava acknowledged Ellins's assistance and patience in listening and responding to the panel's concerns.

Regarding membership, SSP had requested from ODP France that Jean Claude Sibuet be allowed to continue to serve on the panel. France agreed, but this is to be formally routed through the JOIDES Office. Srivastava also mentioned SSP's desire for Roger Scrutton (UK) to continue. Srivastava expressed concerns about the large number of proposals that SSP has to

consider. He would like SSP to have liaisons with PPSP, TAMU, JOIDES and the SSEPs in the new structure. Srivastava thanked TAMU for their liaison to SSP as well as Ellins, who acted as the JOIDES liaison to SSP. He raised his concerns regarding whether SSEPs will be able to take into account SSP recommendations when they meet in May 1997 to consider the proposals, following the April SSP meeting.

SSP made the following recommendation to PCOM:

- Use of GI guns on board *JOIDES Resolution*- SSP recommends that PCOM should direct JOI to request TAMU to explore the possibility of carrying out an evaluation on the superiority of GI guns over water guns for acquiring seismic data at speeds greater than 5 knots on board *JOIDES Resolution* during one of its Legs in the coming year. These guns can be acquired on loan from interested participant(s) on a particular leg where the guns are to be used, or from institutions like Lamont or IFREMER who have been using these guns on a regular basis. If such guns can be obtained, appropriate time and funds will need to be budgeted during that particular leg where this evaluation will be carried out.

Moran commented that a performance evaluation was done on board the ship on two different cruises using borrowed LDEO guns. All worked well. Mountain clarified that water guns were tested, not GI guns. Still, he noted that it demonstrated this method of testing works. SSP wanted to reemphasize the desire for TAMU to put differential GPS on the ship. Srivastava then discussed what the data bank has been doing. There is a tremendous amount of data due to a larger number of proposals.

PCOM Motion 96-3-7
PCOM asks that JOI direct TAMU to evaluate the performance of a GI airgun for underway profiling on the *JOIDES Resolution*. Leg 172 is an opportunity to compare, during any of several scheduled seismic deployments, the quality of a GI gun vs. the water gun source that is currently in use. Whether on this or some other leg, the test should go ahead only if a GI gun plus needed hardware can be procured on loan.

Proposed: Mountain, Seconded: Natland *Unanimous*

SMP

Humphris thanked Gieskes for his efforts in the SciMP subcommittee meeting and with the new mandate. Gieskes said he likes the idea of more liaison between the panels and he expects the documents that have been prepared will help towards this. For the past two meetings, SMP has advocated a review of all shipboard equipment. Now that the groups are assembled, this will be a good effort to be overseen by the new SciMP. Visual core description was raised a few meetings ago by Brown as liaison from TECP. SMP was also asked to look into the costs of a potential microbiology laboratory. In the meantime, he was informed by Falvey that JOI is sponsoring a Workshop. Gieskes said he wants to see better communication between JOI and the new SciMP to avoid duplication in effort. SMP, in response to a message from TAMU to prepare a budget for the year, has prepared a budget as requested, subdividing items costing more than 50K, and items costing less than 50K. JOI has reported that they are already setting aside funds for a new X-ray diffractometer. SMP welcomes this. Regarding Sulfur analysis, a Leco S analyzer can also be used by a scientist if a technician is not available. Paleontologists have been looking forward to a processor for sample digestion, which will be safer and faster. Brown asked if funding for digital core imaging has been allocated. Fox replied

there are funds in the FY 97 budget. Humphris reviewed the presentation and said that SMP wanted feed back from PCOM on some sort of capital replacement plan from TAMU.

PCOM Motion 96-3-8
PCOM requests JOI to request from ODP-TAMU, a list of all major shipboard scientific equipment emphasizing the following:

a. Life expectancy
b. Availability of spares
c. Software requirements
d. Maintenance requirements

Using the above information as a guide, ODP-TAMU is also requested to produce a capital improvement plan for shipboard equipment. PCOM recognizes this will be a significant effort, but hopes that this information can be made available for the first meeting of the new SciMP.

Proposed: Larson, Seconded: Mevel *Unanimous*

IHP

Fryer said she will keep her report brief because some of the issues have already been brought under the PANCH report and others will be brought up by Sager when he will talk about the advisory structure later on in the meeting. The IHP recommendations are:

- MRC report and plans for the Stratigraphic Database Center- IHP recommended to Huber that he send the diatoms but hold the forams until some agreement is reached for providing the necessary vials etc. to process the samples. The panel suggested that the Moscow Curator (Basov) be invited to attend the next curatorial meeting.
- Publications Steering Committee- IHP recommends that the JOI Publications Steering Committee ensure that once some final decision is reached with regard to the future publications of the ODP, a set period of trial implementation is provided for so that the effects of the changes can be evaluated in a deliberate manner. Further, the IHP hopes that the Program will provide for a long-term group to provide oversight of the ODP publications operations.
- Publications- IHP is concerned about the potential negative effects of the Inspector General's investigation of ODP publications and endorses fully the integrity of the publications staff of the ODP/TAMU.
  In addition, IHP supports the suggestion of the ODP operator that a printer be identified who would agree to print on demand a small number of hard copies (10-50, the final number to be decided by PCOM/SCICOM) of ODP SR and IR volumes be printed, to fulfill the archival obligations of the Program, and that copies be distributed to selected localities (libraries, ODP offices, etc.).
- New Advisory Structure- IHP recommends that the long-term functions of the ODP be overseen by long-term standing committees of some sort and that care be taken to avoid convening multiple ad hoc advisory bodies simultaneously to advise different levels of the ODP structure on the same functions.
  The IHP recommends that any JOI-coordinated ad hoc committees have liaisons from the PCOM/SCICOM and the new SciMP and that any reports from the JOI-coordinated committees go jointly to PCOM/SCICOM, SciMP, and JOI.
  The IHP recommends that the scope of the mandate to the SciMP be broadened to encompass most of the mandates of the IHP (as well as the SMP and DMP), but that the

activities of these mandates be performed via some mechanism that distributes responsibility within the SciMP with outside help on an as-needed basis.

- Ethic Issues and Non performers- IHP recommends that in the future, any and all collaborative arrangements made among groups of scientist on board the ship must be approved, monitored, and adjudicated by the Co-Chief scientists of the Leg.
- JANUS- IHP recommends that JANUS Phase II be implemented as soon as possible and that new moneys be identified to support this effort. The IHP recommends going to JANUS Phase II before completion of Phase I (once the SC priorities 1-4 are complete) and made suggestions to the Operator as to what tasks could be taken over by ODP/TAMU instead of having them completed by TRACOR (see minutes).
- Legacy data-The IHP recommends that the migration of the legacy data remain a high priority.

Fryer clarified the issue regarding the shipboard collaboration recommendation that IHP initiated and said the intention was to have the Co-Chiefs be told formally of any kind of collaborative data or sampling sharing or intent to collaborate on publications, that are made on board the ship. PANCH discussed this issue, and recommended that the agreement should be lodged with the staff scientist, and the Co-Chiefs should monitor it once it is formally set up.

With regard to JANUS, IHP realized that some of the JANUS Steering Committees prioritization of 1 through 7 seemed to have changed and that there were items that were in JANUS 2 at the top of their priority list that are really needed now onboard the ship to collect data. IHP recommended that development move on to beginning JANUS 2, and give the responsibility for finishing up JANUS 1 to TAMU.

IHP alse recommended that migration of the legacy data remain a high priority.

Regarding the IHP comment on the Inspector General's investigation, Fryer explained that IHP wants to stress it fully endorses the Publication Sgroup and that there is obviously nothing that would indicate malfeasance of any sort. IHP recommends to PCOM to possibly make some comments regarding this. IHP felt that this Investigation does not look positive, especially considering that the program is now undergoing critical review now.

With regard to the new Advisory Structure, IHP suggested that the SciMP take over the mandates of the 3 service panels. Regarding the part of this recommendation that the long-term functions of the ODP be overseen by long-term standing committees of some sort and that care be taken to avoid convening multiple ad hoc advisory bodies simultaneously to advise different levels of the ODP structure on the same functions, Fryer said this should be ignored as it was already discussed during this meeting. Fryer said she will provide any additional comments when the discussions move to the advisory structure and shipboard collaboration.

Shipley asked if IG report was the one that promoted electronic publication. Malfait said that the IG has the right to look at any program at any time. Fryer said the perception is that they look at fraud.

On the questions of ethics and collaboration, Pearce said there seems to be some conflict as to whether the Co-Chief Scientists should be the overseers of this or not. Fryer said that someone not on board the ship does not know what is going on, and a third party outside cannot know what agreements are established. Natland said there is a shipboard sampling policy that asks the shipboard party to review the entire sampling program and agree upon it. Humphris explained that the problem is that those agreements are not always lived up to, and there are participants whose science suffers..

TEDCOM

Skinner said that his contribution is somewhat limited due to having to return prematurely to the UK to attend the funeral of Jack Pheasant, his colleague in offshore activities within the British Geological Survey. He also said that TEDCOM has an excellent liaison to PCOM in Jim Natland, who can provide the information to PCOM on topics that TEDCOM requests PCOM actions at the appropriate time. Skinner said that too often in the past TEDCOM only became involved in new developments "after the event" or "when they went wrong". He also said that for the future things seem to be taking a different course which hopefully will continue. TEDCOM has the expertise available for initial advice/contacts for various technological topics associated with drilling, and not only the drilling itself, and he wishes to see this expertise being used, through PCOM and its successor SCICOM as part of the forward technology planning to aid ODP science. ODP needs to do as much as they can to preserve the *JOIDES Resolution*, as this ship is the only one that they will have for many years. TEDCOM was asked to put priorities on engineering aspects they felt to be essential. TEDCOM are discussing an ODP-TAMU proposal that TEDCOM meet as a full body only once per year (prior to the Fall SCICOM) and hold sub-committee meetings as required for other matters. Since this was originally proposed, Skinner said they would now wish to have more than only one meeting per year.

TEDCOM recommendations are:

- OD21 Workshop and TEDCOM - TEDCOM will support the OD21Project as fully as possible. The *"JOIDES Resolution"* is likely to remain the only option for global ocean drilling while the OD21 vessel undergoes a test period of drilling in Japanese waters for a few years post-2003. This will have implications on any refurbishment/refit options to that vessel which may be influenced by ODP.
- TEDCOM interactions- TEDCOM request PCOM to consider agreeing to a single TEDCOM meeting per year, together with sub-committee meetings for progressing selected projects.
- Active heave compensation- TEDCOM will advise PCOM, by the December '96 meeting regarding Active Heave Compensation (AHC) which could be fitted to the *"JOIDES Resolution"* to improve coring.
- Hammer drill- TEDCOM recommend that the hammer drill project be closely monitored and be slowed down if good information and favorable results for a *JOIDES Resolution* operation are not forthcoming from SDS, even if this precludes a product for an engineering test in 1997.
- Drydocking - TEDCOM will assist ODP-TAMU in building up a priority list for drydocking requirements. Implementation will be dependent on finally agreed funding.
- Engineering Legs - Leg 175B- will test the Hammer-in Casing if available; the projected DCS test leg will not be required.

Active heave compensation and the hammer drill-in system were discussed. Active heave is more feasible now than when first presented in 1989. Following discussions at the Yokohama TEDCOM meeting regarding active heave compensation, a TEDCOM Sub-committee and ODP-TAMU met in December to determine a TEDCOM recommendation for this PCOM meeting. The sub-committee's conclusions are that an active heave compensation package is a feasible option that will improve all ODP coring and logging operations. It will also aid DCS operations, but may not, simply by its installation, allow DCS to operate without a secondary heave compensation system. There was much less unanimity on the hammer drill system, as TEDCOM though that TAMU was working with a contractor who may have been

pulling the wool over their eyes. TEDCOM asked TAMU to go back and get good data and information. TEDCOM is now satisfied, as TAMU has responded to TEDCOM concerns. TEDCOM now feels that the chances for success are very good for the engineering leg.

Skinner discussed membership problems in TEDCOM. Charles Sparks has been retired by his parent organization IFP, and France will be providing a replacement. The loss of Charles Sparks to TEDCOM is a serious blow as he is one of the foremost authorities on Slimline Riser Technology which is going to be a feature of technological innovation in the years to come. The UK operates with "alternates" and it will have to nominate a 'replacement' for Jack Pheasant in due course. They need also at least one more US member and he asked PCOM to advise the chair of TEDCOM on the US membership.

Sager asked how TEDCOM feel about the active heave compensator impact on DCS development. PCOM had been told that any delay could kill DCS. TEDCOM reminded PCOM that if they can get the active heave compensator to work, then 95% of problem is addressed. Natland will elaborate further on this in his report. Francis asked about the TEDCOM recommendations to TAMU on the dry-dock refit. Humphris said this should come through the JOIDES Office to JOI to TAMU. Skinner said he is not sure he can collect this advice and give it to Humphris. He will ask TEDCOM members to send advice to PCOM also. Regarding membership on TEDCOM, Falvey said the decision for U.S. membership will come from USSAC.

PCOM Motion 96-3-9
PCOM applauds recent developments to improve all coring operations through technological development at ODP/TAMU. PCOM approves TEDCOM's recommendation to put DCS Phase III development on hold and apply currently identified DCS funding for FY '97 and FY '98 to conversion of the primary heave compensator to an active heave-compensation system. Procurement of the new system should follow review of the simulations requested by TEDCOM.

Proposed: Natland, Seconded: Kudrass *14 For, 2 Abstain*

PCOM Motion 96-3-10
PCOM endorses TEDCOM's recommendation on the test sequence for the hammer drill and drilling casing, but defers the at-sea test until Leg 179 (April-June 1998). James Natland is appointed a sub-committee of one to identify locations for testing, and report to TEDCOM and SciCOM in the Spring of 1997.

Proposed: Natland, Seconded: Larson *Unanimous*

PPSP

Ball said the panel does not advocate or promote proposals, but is only concerned about their safety. The panel works very closely with SSP and with SSDB. Larson thanked the safety panel and noted their diligence and said that nothing serious has happened over the years. Mountain concurred, but noted that there is a down side to the conservative caution of PPSP and the TAMU Safety Panel. Mountain noted how this has negatively impacted his science and would like to see PPSP intervention earlier in the system, and suggests that an earlier PPSP review is needed. Ball responded that there will be early interaction between SSP and proponents regarding potential hydrocarbon hazards. Co-Chiefs do not get this information on safety requirements until the leg is scheduled. Humphris said it needs be conveyed to proponents. The

new Site Summary forms will alert proponents to the need to get information on hydrocarbons into the system early. Mountain noted that this is conveyed in the watchdog letter. The panel suggested that the Green Book on safety and general guidelines be updated so that it can be sent to proponents and put on the web site. Ball agreed that this is a good idea and this will be done. Francis noted that proponents do not like to do extra work, whereas they will do it if they have been nominated Co-Chiefs.

F. Leg Reports

1. Leg 168

Davis reported on results from drilling during Leg 168, which addressed the issue of fluid flow on the flanks of the Juan de Fuca Ridge. He presented a transect through aging crust along the eastern flank of the Juan de Fuca Ridge. The closest point where fluids can get into crust is to the west, and all sites are located progressively at distant locations from it, to a maximum of 3 km. Drilling was used to determine fluid flow velocities, fluid fluxes and fluid temperatures. The temperature variability on top of the crust along sediment/basement interfaces, measured at several locations, is only on the order of 2°C, probably due to vigorous mixing. At the formation scale, the system is more variable than at the borehole scale, generating a paradox. Osmotic continuous fluid samplers installed at the end of each hole will measure T and P at the bottom of the hole as the system goes back towards equilibrium in the next few years. This leg has provided better constraints on temperature and fluid flow . Sulfate (SO_4) content decreases away from the ridge, but not to zero, as would be expected. It is possible that a sulfate reservoir in the crust is slowly diffusing into pore waters, or there is an additional source in sediments, like anhydrite. Time-dependent chemical budgets will be generated from data to resolve this issue. Mg can be used as a good tracer of the temperature of reaction in upper crust because it decreases with increasing temperature of reaction.

Natland asked how osmotic sampling is done. Davis replied that 800-900 m of coiled tubing is filled with fresh distilled water at the beginning, and then salt water fills in with time through osmosis. Later on, the tube is removed and cut into portions to represent times of different fluid chemistry. This gives a time-series on fluid composition. Carter asked that if Working Groups were to be planned to develop research on hydrothermal fluxes, how would Davis suggest this be done after this experience? Davis replied that the target of this leg was only the upper crust. However, there was evidence of activity at depth, and they could now identify target areas for deeper drilling for the future. Pearce asked what is causing the Mg/T correlation. Davis said he thinks it is an equilibrium reaction, but he does not know.

2. Leg 169

Zierenberg said this Leg was technically difficult and comprised several diversified objectives. He felt this is the most important leg ever drilled. About 100 m of massive sulfide were penetrated at Bent Hill which is underlain by an addition 100 meters of feeder zone mineralization. The upper part of the feeder zone is intensively veined, and the number and width of veins decreases downhole indicating changing hydrological regimes at depth. The base of the mineralized area is a turbidite complex, and the contact is probably a fault, as imaged by logging. He said these sands are a conduit for fluid flow, and act as a separator between basalt at the base and sulfide deposits on top. Additional holes were drilled around this one, allowing a

cross section to be reconstructed. Zierenberg said that Escanaba Trough was drilled to investigate its sediment filling and hydrothermal history. This area is much more enriched in sedimentary hydrothermal components compared to a mid-ocean ridge. This is interpreted as related to a major difference in the duration of intense event of sulfide formation.

Pearce asked for volume estimates of sulfides. Zierenberg replied that it is on the order of 15 M tons. He said that often plastic core liners melted and rubber seals in the drill string even evaporated. Humphris asked if they tried to drill without liners. Zierenberg said they had aluminum liners, but that they were not used. Mountain asked if they have number on average recovery rates. Answer is 25-30% recovery at base of mound, but it is very difficult recovering core in the uppermost rubbly and unconsolidated part. Zierenberg said that hammer in casing would have not made a difference, but maybe DCS would have. Carter asked about the response from environmentalists. Zierenberg responded that they did not do any more damage than an earthquake. Robertson asked about large-scale hydrological recharge. Zierenberg replied that there was lots of local recharge, but they did not study the large-scale aspects.

G. Ongoing Computer and Publication Projects

1. JANUS

Moran reported on the JANUS Steering Committee (SC) meeting at the San Diego Port call and presented the status of JANUS development and the schedule for the deployments (see Appendix 17). Different user groups were defined: UG 1 through UG 4b/5. Regarding the sedimentary/structural aspects (in development under UG 4b/5), Applecore has been taken from the shelf (the cost is ca $300) and modified and will be deployed during Leg 171B.

Moran said that the SC is pleased with Tracor performance. She reported that several problems exist at the project management level, including: 1) bad relationship between TAMU and Tracor, 2) tendency to wait for more "community input", 3) there is bad press given to contractors on several fronts, 4) TAMRF do not share budgetary project information with the SC so it is difficult to assess priorities. In addition to the project management, TAMU has not yet shown a commitment for getting software developers on the ship, which isan essential component for the long-term success of JANUS. TAMU proposed managing Tracor personnel post-171B in personnel-training type contracts.

Regarding the JANUS digital image core description (Appendix 18), Moran reported that a work statement to define the user requirements was drafted in March 96, then an additional meeting with Applecore developer in Halifax defined core description changes to Applecore. There, digital image needs were also reviewed. The SC met in October 96 and generated a better definition of the proposed approach. The SC recommendations to PCOM are listed in Appendix 18.

Sager said he heard about the possibility of cutting off the Tracor contract. Moran replied that it would be a bad idea to cut them off now, as they have taken a long time to understand what the need is, but have shown their good intentions by taking the time to sail. Larson said that the cost of the JANUS project has had impact on many budgetary items, including publications, and he wanted to know more specifically what is wrong and how it will be fixed. Moran said that the biggest problem she sees is because the initial contract had unspecified deliverables, and now TAMU is trying to make it into a fixed deliverable contract, asking them to produce monthly reports. She felt that a change of attitude is needed from the TAMU side.

Humphris said there is a strong need to send a message to JOI about the need to fix this. PCOM will endorse the long term support of JANUS , and say that they would like Tracor personnel to sail regularly in order to complete the JANUS project.

Regarding budgetary issues, PCOM agreed that a mechanism has to be put in place so that any future development on the ship includes JANUS. Humphris said PCOM will ask that the capital improvement plan from TAMU should include software and data development. Robertson wanted to reinforce the TECP recommendation and noted the value of the Clift report and Brown report on digital data. He noted that this is the first time that he, as TECP Chair, has received information on the Applecore program. Brown wanted to reemphasize the efforts on the digital capture system and what LDEO is doing. He noted that there are many overlaps and wanted to spend the money wisely. Loutit said that Splicer and Sagan and the interface to the database are at the forefront. Moran said that Splicer has been implemented and will be checked in Charleston during the port call, but Sagan has not been completed. Fox suggested that it would be wise to step back and look at JANUS in its totality in order to determine how things can be done better in the future. It is noted that there were no deliverables in the contract between TAMU and Tracor. Fox also noted that TAMU was asked to work with Tracor, but the ultimate authority lay with the JANUS Steering Committee. Tracor was aware of this and the situation has created several problems. Fox noted that the concept of the Steering Committee is good, but it must not separate authority from the entity which is paying for the service to be provided. Fox noted that the Steering Committees has the authority to make decisions about what direction projects can go in. Falvey corrected Fox and stated that a steering committee only provides advice. Falvey said that this is between TAMU and TRACOR. Fox pointed out that Moran, Chair of the JANUS Steering Committee, has requested confidential budget information to which TAMU feels she is not entitled. Brown noted that the structural measurements need to be treated differently from other data, and that it would be nice to have a person who takes such measurements on the ship be involved with the Steering Committee. Tim Byrne is suggested. Humphris said she can pass this name onto JOI. Humphris noted that JANUS interfacing should be included in the proposed TAMU Capital Replacement plan. Also, she noted the PANCH recommendations pertaining to JANUS. Fryer and Robertson want to be sure that it is noted that there is some ambiguity between what is intended in Phase 1 and Phase 2. Moran replied that Phase 1 is for existing ongoing data collection, which is taking place now. Measurements not currently collected are included in Phase 2. Some discussion that data migration represents a Phase 3 ensued. Loutit said that this is something to be taken in to account now as it is important in the long run. In subsequent discussion, the issue of reporting was considered. The question raised was that if these are JOI Steering Committees, how will information be conveyed to the Advisory Structure.

PCOM Motion 96-3-11
PCOM is concerned that the success of the fundamentally necessary and expensive JANUS data base upgrade is being hampered by management-related issues at TAMU. PCOM recommends that JOI direct TAMU to investigate and correct any management related problems that are posing a serious risk to the successful completion of this project. TAMU should report to SCICOM at their April meeting on the steps they have taken to rectify these problems.

Proposed: Brown, Seconded: Larson *15 For, 1 Absent*

PCOM Motion 96-3-12
PCOM reaffirms its support of the JANUS Oracle database project and endorses the PANCH recommendation that funds be found to allow the completion of the initial database development (i.e., software interfaces for existing shipboard equipment, a.k.a., JANUS Phase I) and for a follow-on project to develop an electronic core description system (a.k.a., JANUS Phase II).

Proposed: Sager, Seconded: Brown *Unanimous*

PCOM Motion 96-3-13
PCOM recommends that JOI direct ODP-TAMU to facilitate ongoing evolution of the JANUS database by the following: (a) regularly sending JANUS software personnel from TAMU on drilling legs to evaluate and improve JANUS software and (2) include development of a JANUS interface into capital equipment replacement programs.

Proposed: Sager, Seconded: Moore *15 For, 1 Abstention*

PCOM Motion 96-3-14
PCOM supports the migration of existing data to JANUS. The migration of biostratigraphic data should be a priority.

Proposed: Moore, Seconded: Brown *13 For, 3 Absent*

2. Publications

Falvey showed the diagram that he had shown previously at the August PCOM meeting in Townsville, showing that publication of books of the Initial Results will be extended out to Leg 175 (Appendix 19). The traditional books of the Scientific Results will be published up to, and including, Leg 168. The diagram also shows the current outline for implementation of the publication policy which had been approved in Townsville, and which is now in place.

Fryer asked if the intent is to keep a paper copy on low acid paper. Falvey responded that an archival copy will be kept. Carter asked where advice will come from regarding the information contained on the CDs and electronic publications. Falvey responded that this will be from the pertinent experts and users. Fryer noted that one of the dreams that IHP has held is that there be an interface with JANUS. Falvey said that this is written into the policy document that was approved by EXCOM. It is intended that there will be hotlinks on the web between publications and the JANUS database. Fryer said she would like to see this in the mandate as this will require oversight by the new SciMP and she would also like to see such an expert on the JOI Publications Steering Committee. Falvey agreed to take this suggestion on board. Brown noted that CDs will go out of existence and asked what type of money will be involved in the switch to upgrade technology. Shipley stated that we know that the technology will change and can be addressed by foresight and ensuring planning to transfer from one media format to the next. Falvey said that Dave Scholl will be the Chair of the JOI Publications Steering Committee and Kappel will be the JOI liaison to the Committee. Humphris asked about a questionnaire that was mentioned by Falvey during his report. He said that this is something that TAMU is going to do. Fox added that Ann Klaus suggested to Kappel that a questionnaire be sent to the community, and he has seen a first draft.

Mevel objected that the national committees were not asked to recommend names of people to serve on this Steering Committee. Kudrass pointed out that at the Townsvillle PCOM

meeting, Falvey requested the non-US PCOM members request that their respective national committees submit names of scientists to serve on the JOI Publications Steering Committee. Humphris explained that the thematic panels were also asked to submit candidates and these have been forwarded to JOI. In response to concerns relating to the direction of publications staying in step with other geosciences publications, Falvey said that there will be certain check points along the way to ensure that the publications policy and changes are being implemented properly. Sager noted that IHP was not asked to propose representatives to the committee. Humphris explained that it is because SciMP will have to provide the person.

Mountain wanted to know why this is a JOI committee instead of a committee within the Advisory Structure. Falvey said it short-circuits the advisory structure to permit TAMU (Ann Klaus) to be directly advised. Falvey said the project plan for the new publication policy is already in place, but this is such an important issue that a JOI Steering Committee has been established. Natland asked for an explanation of how reporting will occur and clarification of the links to SciMP or SCICOM. Falvey will report to SCICOM since the Publications Steering Committee will be a JOI Committee. Natland expressed the opinion that the reporting should be to SciMP. Humphris said that the experience of the JANUS project suggests that the advisory structure is not well enough informed by this line of reporting. She added that in light of this experience, reporting at other levels must be considered. Falvey suggested that a hard line could be established to SciMP. Humphris suggested that SciMP members should be liaisons to both JANUS and the Publications Steering Committees. Fryer asked if the Steering Committee will continue in perpetuity. Falvey responded that the Steering Committee must have a sunset clause.

PCOM Motion 96-3-15
PCOM recognizes the need for rapid communication between SciMP and the various steering committees set up by, and reporting directly to, JOI, which have mandates overlapping that of SciMP. PCOM authorizes SciMP liaisons to these committees where appropriate.

Proposed: Sager, Seconded: Brown *Unanimous*

Larson stated that he was approached by participants at FUMAGES regarding the same concerns that SGPP has expressed about dropping the hard copy. This has led Larson to conclude that there is a broad concern about this matter, and this continuing problem has to be addressed by SciMP and the Publications Steering Committee. He asked at what point should publication of a hard copy cease, and suggested that the minimum requirement is a workable electronic publication, as well as acquiescence from the community to this change. Humphris reminded PCOM of the checks along the way, and requested Falvey to ensure that continuous review of the publications policy takes place as it is implemented.

Brown asked whether ODP should charge for their Results Volumes. Humphris felt that the Steering Committee could be asked to consider as a possibility.

There was also discussion of ODP funds going to support page charges in published volumes of journals. Malfait suggests that this is a pit into which ODP should not fall. USSAC-funded scientists can use their support funds to pay these charges. Carter said that the ODP Volumes in the past have provided high quality paleontological microplates, and cautions PCOM to be aware of whittling away at the edges of the program in terms of the data that ODP has provided to the entire community. Humphris said that these plates, as well and other types of data, can be downloaded from the web. McKenzie said at present it is very difficult for people

outside the US to do this, as the system often crashes when one attempts to do so. Humphris did not think that page charges are the way to go, and felt that PCOM cannot act on these recommendations now. Humphris suggested that these concerns should be passed on to the Steering Committee. Pearce said that the UK pays page charges in journals. Humphris said this should be passed on to the national committees to handle these issues. National committees can take decisions on whether they wish to fund page charges..

H. JOI Workshops Reports

1. Curatorial Report

Moran reported that the Curatorial Workshop was very successful and represented the first hard look at the original curatorial policy, which came from NSF and DSDP. The thrust of the original policy was, " this is what you cannot have", and the workshop sought to replace this tone with a flexible, positive policy. The policy was based on determining the minimum archive needed to support science in the future, and the setting up of a "sampling strategy". The new policy is broken into four components. The first is the leg-specific sampling, for which a strategy will be developed by a Sample Allocation Committee for each leg. This will be published in the Leg Prospectus, and scientists will develop their Sample Requests based on that strategy. Problems will be resolved by a Curatorial Advisory Board.

The new proposed curatorial policy distinguishes between a Moratorium phase, with leg-specific sampling and a Post-Moratorium phase (after 15 months) (Appendix 20). Moran commented on the changes to the policy and said that a major one is linked to the realization that the 50 cc per meter sample size is a guideline, although it has been used as a rule. In addition, the workshop participants want to see a formalized sampling strategy, and have also recommended that approval of the revised curatorial policy be swift, as people in the community will want to abide by it as soon as it is known. The workshop report also suggests that the drilling proposal information submitted by proponents should include initial proposed sampling strategies. The recommendations to PCOM from the Curatorial Workshop are listed in Appendix 21. Moran distributed an outline of the new ODP sample distribution policy (Appendix 22).

Humphris asked how the inclusion of proposed sampling strategies can be done at the proposal stage. Moran responded that by doing this, proponents will have a better idea of how many cores will be required to achieve their objectives, and it will influence the number of cores collected. Humphris expressed concern for how this would work for a hard rock proposal. McKenzie pursued this line of questioning and asked how the policy differentiates between hard rock and sediment legs, as recovery rates can be quite different. Moran said that the uniqueness of the hard rock holes is addressed in the workshop report. Sager had concerns about making out a sampling plan in advance without knowing what might be recovered.

Sager was concerned that people on board the ship with a more flexible policy will be encouraged to oversample the cores. He feared that inexperienced Co-Chiefs may be bowled over by scientists who will want to take away more core than they will actually ever use. Sager further noted that SciMP will have to monitor this policy and that this committee is rapidly becoming overloaded with work. Natland noted that there are some existing policies in place to avoid oversampling and asked what this new policy does to that older policy. Moran replied that the old one is gone. Moran noted that the participants of the Curatorial Workshop represented a lot of shipboard experience. Natland said that there was an ODP cruise with open sampling (Leg

37) once and that the participants tore the core apart. Natland said that the existing policy has worked well. Moran pointed out that there were four hard rock people on the committee and they disagreed with the concerns that Natland expressed. Humphris noted that there is a difference between soft and hard rock cores, and stricter guidelines might be needed for hard rock legs. Johnson said that the proposed policy is a restrictive shipboard policy and a flexible post-cruise sampling policy. He noted that the shipboard frenzy is very real. Mountain noted the cost implications of shorebased sampling parties (travel, etc). Sager said there must be a two-tiered sampling policy. Shipley applauded this effort and noted that ultimately there is the problem of over sampling at sea, adding that the role of the external board may be significant. Shipley said that it is important to have someone to backstop the Co-Chiefs.

Falvey said that there is pressure in the community to see changes happen quickly. This must go first to EXCOM and then ultimately ODP must have NSF's permission to change the policy. PCOM could in principle endorse it so that it can be inplaced by the end of March. If a thorough review is done, then there will be a significant delay. Fryer wanted to see the non-performer issue addressed in the policy. Humphris wanted PCOM to read the draft policy and see whether they can endorse it in principle and then recommend modifications, which can be dealt with by JOI and subsequently included in the presentation to EXCOM.

Regarding shipboard collaborations, Moran noted that there are cases where samples collected on the ship have then been passed on to another person. She noted that the participants of the Curatorial Workshop felt that this is the obligation of the person who collects the samples. They were split on whether such scientists should ever sail again on a ship as long as the dispute remained unresolved. Sager pointed out that the non-performer issue has always been difficult to address. Although letters have gone out to non-performers and their national committee offices, ODP cannot actually dictate to the national committees whether people can or cannot sail again. Moran noted that there are a number of rules to be followed that will help address this. Humphris noted that TAMU has been policing this, but the exceptional cases need to come back to the Advisory Structure, and SciMP is the place for this. TAMU is charged with the implementation of the policy. Sager noted that dissatisfied scientists will always take their grievances directly to the Advisory Structure. Moran noted the recommendation of the establishment of the CAB, which will be a permanent group that will deal with these sorts of problems. PCOM discussed whether they should endorse the policy without the inclusion of example sampling strategies. PCOM agreed that this will be left to curation at TAMU to implement. PCOM set up a small sub-committee to look at the policy and make recommendations the following day. The sub-committee consisted of Mix, Pearce, and Kudrass.

PCOM Motion 96-3-16 PCOM endorses the recommendations of the JOI Sampling and Curation workshop as revised by PCOM.

Proposed: Larson, Seconded: Moore *14 For, 1 Abstain, 1 Absent*

2. Co-Chief Scientists' Workshop

Falvey reported on the Co-Chief Scientists' Workshop, hosted at JOI (see Appendix 23), at which Co-Chiefs from Legs 160 to 169 were represented.

- The issue of shipboard staffing was among the many issues addressed. Co-Chiefs requested more flexibility from non-US partners in choosing shipboard participants. Non-US partners

nominate only two people, requiring the US to pick up the responsibility of achieving scientific balance.

- Public Affairs were discussed and the improved communications between ship and shore were noted. Regarding press releases, it was felt that the science should come first, then the program as the means of delivering the science, and only then should agencies and organizations be promoted in press releases.
- PCOM was asked to be more aware of the pitfalls of trying to achieve too much with respect to combining proposals, especially in creating multidisciplinary drilling programs. It was felt that the original proposals were always too optimistic and Co-Chiefs then had to modify the science that had been voted on and approved by PCOM.
- Flexibility in when salary in JOI/USSSP grants can be used was discussed and JOI pointed out that JOI/USSSP has always been flexible, although this has not generally been realized.
- Regarding shipboard scientist job titles, TAMU will redefine these according to the scientific needs of each leg. The idea is to match science to the leg instead of having fixed scientific job categories.
- Another issue considered was the shipboard laboratory. It was felt that ODP-TAMU should organize Working Groups for each lab and produce a clear statement of why each laboratory exists.
- VSP was considered very important, and LDEO was asked to bring before SCICOM the benefits of this. It was felt also that shipboard photography needs to go digital as soon as feasible.
- The JOIDES Office has been asked to alert national ODP offices about emerging site survey needs connected to highly regarded ODP proposals. In addition, the JOIDES Office should advertise the following year's science plan in EOS to attract scientific participation.

Mountain said that it is a great idea to have JOIDES Office alert national ODP offices about emerging site survey needs connected to highly regarded ODP proposals, although this is already conveyed by the SSP watchdog very effectively in the watchdog letter to proponents. The main point here, according to Falvey, is that a bigger flag is raised if this comes through the JOIDES Office. On the issue of shipboard staffing, Fox pointed out that Zierenberg's Leg (Leg 169) had 8 sulfide petrologists (7 more than he needed). As a consequence, he couldn't get the one or two that he wanted himself, and it created havoc on board. This problem arose because the member countries came forward with only one or two names each. Humphris will write to the National Offices on this point. Robertson raised the human management problems that crop up leg after leg. He noted that as a Co-Chief himself, he did not have much guidance on the sociological and psychological aspects of an ODP cruise. He felt the problems could be avoided with proper preparation. PCOM agrees that this it is an issue.

I. Implementation of New JOIDES Advisory Structure

1. EXCOM Outstanding Issues

Humphris reviewed the EXCOM outstanding issues which include OPCOM membership, SciMP mandate and membership, and the need for Working Groups. Regarding the PANCH Recommendation on OPCOM, Humphris pointed out it should not say voting as the members of OPCOM will not vote, but operate by consensus. Humphris asked for any changes that PCOM wanted to see. Mountain asked for clarification on the difference between liaisons and non-voting

members. Liaisons come from other panels and operators within the advisory structure and provide advice to the Committee of six who makes the decisions. Sager said that SciMP, and other service panel chairs should attend both meetings. Larson said that the concerns from EXCOM are to do with proportional representation.

PCOM Motion 96-3-17
PCOM reaffirms its intent that OPCOM be a SCICOM subcommittee of six, chaired by the SCICOM chair. The other five members, chosen by SCICOM, will be two other SCICOM members and three non-SCICOM members from the general ODP community.

Proposed: Larson, Seconded: Mix *Unanimous*

The next issue discussed concerned the differences among PPGs, DPGs and WGs. Humphris explained the differences between the three, but pointed out that the mandates for the PPGs and WGs overlap. Mevel totally supported the PANCH recommendation to discard the Working Group category. In response to a query from Sager, Humphris said WGs can be called PPGs. The current mandate for the PPGs can be modified to include science and other functions.

PCOM Motion 96-3-18
PCOM recommends that JOIDES Working Groups (WGs) be deleted from the new JOIDES Science Advisory structure and that their mandate be merged with that of Program Planning Groups (PPG). The revised mandate and purpose for PPG are as follows:

General Purpose

Program Planning Groups (PPGs) are small focused planning committees formed by SCICOM when there is a need to develop drilling programs or technological strategies to achieve the goals of the Long Range Plan.

Mandate

PPG will advise upon drilling/technology strategies and proposals for major scientific objectives that are not adequately covered by existing drilling strategies or proposals. Drilling proposals arising from PPG meetings must be submitted to the JOIDES Office by individual proponents or groups of proponents. PPG will also foster communication between the ODP and other major geoscience initiatives.

Reporting

PPG will report to the appropriate panel in the JOIDES advisory structure as directed by SciCOM.

Proposed: Sager, Seconded: Pearce *15 For, 1 Abstain*

2. Scientific Measurements Panel

Sager explained the deliberations of the PCOM subcommittee on the Scientific Measurements Panel and detailed their interaction with the service panels which will be disbanded. These panels worked very effectively with the PCOM subcommittee. The panels felt that none of their mandates could just be eliminated. Since SciMP cannot do all of their previous tasks, management issues will have to be handled by the operators and WLS. Sager reviewed the mandate that the PCOM subcommittee on the Scientific Measurements Panel had written up and the flow of information to and from SciMP. Larson asked if SciMP will report in parallel to both OPCOM and SCICOM. The answer is no, and will be addressed under Reporting Paths. Sager said that the subcommittee saw a need for two types of advice: at one level a small ad hoc

advisory committee composed of one or two experts and at another level, WGs with a finite lifetime tasks with specific charges. Two meetings per year are proposed. Payment for participation/attendance of these individuals on advisory committees and WGs is an issue that is dealt with by different countries in different ways. Carter commented that the term Working Group is one understood by the community and might be appropriate in this case. Humphris and Mevel suggest that these proposed advisory committees and WGs should simply be called ad hoc advisory committees, which would eliminate confusion (and PCOM had just decided to eliminate the term WGs). Another point of discussion was why there is a need for a liaison from NGDC. NGDC has a contract with NSF to be the long-term repository of ODP data. It is also one of the largest databases, so it is useful to have a representative at SciMP meetings. In the past, this individual was a member of the committee and attended all meetings as a voting member. Shipley said that he prefers the NGDC representative to be an offical member. Carter said that having the person from the NGDC serve as a liaison to SciMP elevates the NGDC to an important position to which it is not entitled as it is not part of the JOIDES structure. Fryer mentioned the newly established German Stratigraphic Center of which Bill Hay will be in charge, and hence a representative of that could be an important SciMP member.

Sager presented the Reporting Path that allows operational advice to flow to OPCOM and then to JOI (Appendix 24). However, advice with scientific implications will be passed to SCICOM. Some comments were made regarding the reporting path diagram. Humphris pointed out that the diagram should be entitled "Information Flow" instead of " Reporting Flow". Mix suggested that the information lines on the left be removed.

Sager discussed the changes connected to the elimination of the three service panels (IHP, DMP, and SMP) and noted some tasks will have to go elsewhere. There will be little or no refereeing of policy disputes by this panel. There will be less expertise sitting on the Panel. There will be little oversight of third party tools, and no review of the logging prospectus. LDEO-BRG will have to oversee third party tool development. Finally, Sager listed the requests for WGs that were provided by the now disbanded service panels. SMP has asked for laboratory advisory committees. DMP has asked for a group on seismic profiles and one on log quality. IHP has a sub-committee on long-term paleontology and stratigraphy. This is a very important database that needs to continue to be dealt with, particularly during data migration. In addition, Sager noted that it might be extremely difficult to find a Chair for the Panel because of the enormity of the task. Some members from DMP and IHP have expressed interest in continuing, but none of the Chairs of the old service Panels wishes to take on the Chair of SciMP. PCOM noted the efforts of the Subcommittee and the service panel chairs resolving this issue and thanked them for their hard work.

Moore reviewed the DMP Recommendations from the panel's final meeting. The panel had recommended that proponents now be required to provide logging information on the Site Summary forms. Ellins noted that the Site Summary forms are being revised by Quoidbach at the SSDB and said she has written to Rick Jarrard to request that he communicates with Quoidbach on the matter.

PCOM Motion 96-3-19

PCOM endorses the following statement of purpose, mandates, membership, reporting paths, meeting guidelines, and liaison assignments for the Scientific Measurement Panel (SciMP).

General Purpose

The Scientific Measurements Panel (SciMP) will contribute information and advice to the JOIDES community through the Operations Committee (OPCOM) with regard to the handling of ODP data and information, on methods and techniques of ODP measurements, and downhole measurements and experiments.

Mandate

SciMP will provide advice on ODP information related to scientific measurements made onboard *JOIDES RESOLUTION* and alternate platforms, within and around boreholes, and on samples collected by ODP and associated programs. Its specific mandates are to develop policies concerning said measurements and to furnish advice about scientific measurements , which will assist the Science Committee (SCICOM) and OPCOM in the formulation of annual and long term plans.

Specific responsibilities for the panel are publications, databases, curation, computers, shipboard equipment usage and needs, measurement calibrations and standards, and borehole measurements, equipment, usage, and needs.

Reporting Path

SciMP recommendations will be sent to OPCOM. The SCICOM chair will decide whether these are operational or scientific issues. If purely operational, the recommendations will go directly to JOI for action. If having scientific implications, the recommendations will be passed to SCICOM for consideration.

Membership

SciMP will consist of sixteen members proportionally representing the ODP partners (10 U. S. and 6 non-U.S.). The term of membership will be three years. Members should have expertise representing the three core areas of the panel mandate, namely information handling, downhole measurements, and shipboard measurements. Ideally, many of the panel members will have experience onboard the drill ship, *JOIDES Resolution*. With SCICOM approval, the panel may bring in additional information about its mandate issues by setting up ad hoc advisory committees whose lifetimes are mandated by SCICOM.

Meetings

SciMP will meet twice a year, mainly at the location of one of the Science Operators to encourage interactions between the Panel Chair and Operators. Other acceptable meeting locations include port calls of the *JOIDES RESOLUTION* and other locations appropriate to the Panel mandate. These meetings will be held prior to OPCOM meetings so the recommendations will be quickly acted upon.

Liaisons

SciMP should have non-voting liaisons from SCICOM, JOI, the Operators (ODP-TAMU and LDEO-BRG). A liaison to TEDCOM is recommended for collaboration on development issues. Liaisons to other JOIDES advisory bodies may be sought with the approval of SCICOM.

Proposed: Carter, Seconded: Johnson *Unanimous*

3. Mail Reviews- Report from Subcommittee

Natland reported from the subcommittee on mail reviews and showed the guidelines they have come up with (Appendix 27). The outcome is that the structure we have now, nurturing proposals, is working very well, and only those proposals that are almost ready for scheduling

would be sent out for review. Proponents would have the choice to put their proposal out for review immediately by asking in the cover letter. Before they can be sent out for review, proposals must meet a list of technical requirements.

Carter asked if there is already a length limit in proposals. Ellins said that such guidelines were put in place 2-years ago on the recommendation from PANCH, and this is known to all proponents. Mevel suggested crossing out the wording regarding *JOIDES Resolution* capability, as this restriction will not apply to phase III. Humphris said that PCOM should first put emphasis on science, then on technical aspects. PCOM discussed whether a 2B or a 2C in site survey readiness should be considered a criteria. Humphris said that technical aspects should be handled within the ODP structure, whereas scientific advice should be sought from external reviewers. Ellins asked if SSEPs or external review will decide whether a proposal is site-survey ready and said that some site survey readiness must be evaluated by SSEPs. Mountain agreed and said it is risky to have this decision made by reviewers, who might not understand entirely site survey readiness requirements. Humphris noted this a point of concern and will look more into it.

Mix commented that there will be lots of work for outside reviewers. Mountain said we should try not to clog the system with immature proposals. Shipley said that if the PI can decide if they want proposal to go out immediately out for outsides review, all of them would choose this option. He thinks this will allow bad proposals to go out, damaging ODP's image. Carter said that it is unrealistic to send out 12-13 proposals, as the objective of the review is to decide what goes into the prospectus, therefore he thinks that 20-22 is an appropriate number. Malfait said he is in favor of reviewing anything that comes in as soon as it is considered ready for review, and that it is arbitrary to decide what is 2B or 2C. Malfait also commented that some countries will make site survey data funding available only if a proposal is in the system. Shipley commented that whatever is decided, it will be a difficult transition and suggested that it is important to keep in mind that the program is multinational and different languages are a reality. Mevel said that many proponents will not want to have their proposal sent out before they have interacted with SSEPs. Mountain said that there is the need to assure proponents that they will benefit with interaction from the SSEPs. Pearce suggested that proponents write an abstract, which could be reviewed, as a first stage, then if comments are positive it could then be rewritten as a more complete proposal. PCOM's general perspective is that not all proposals should go out for review, as that could damage ODP's image. Carter asked if we need ta mail review process. Humphris said that PCOM has suggested it and EXCOM approved it. McKenzie said that as the whole system has changed, maybe it is time to change the proposal system. One idea would be for letters of intent or preliminary proposals to be submitted, which are then nurtured and given feedback by the Panels. After this, proponents can come back with a full proposal, which will go though the review process. PCOM thought this a good approach, and suggested this approach be developed, together with characterization of the requirements for two levels of proposals.

Humphris said that confidentiality arguments require that science reviews are not handled by the JOIDES Office. Humphris and the subcommittee will work with Malfait and Falvey to develop a plan and will circulate it to PCOM members in January for comments.

4. Meeting and Proposal Schedule

Humphris showed the schedule regarding the new proposal annual cycle and indicated that the proposal deadlines will be moved to May 15 and September 15 to have time to get proposals logged and sent to the SSEPs. PCOM had no suggestions for changes to this schedule.

5. Procedures for Nominations to SCICOM and SSEPs

Humphris asked all the international members to briefly review nomination procedures for the country/consortium which they represent. Suyehiro (Japan) said that a meeting to nominate one person for SCICOM and one for each SSEPs took place on December 2. The selection criterion was for a person with broad scientific understanding. Kudrass (Germany) said that the whole community discusses and nominates the panel members, and EXCOM and SCICOM representatives are nominated from the Geological Survey. He said they are now trying to change, and have established a subcommittee that will meet in January. Pearce (UK) said that they will have one member from each appropriate thematic panel to go on to SSEPs, just for the transition year. The person on SCICOM is selected by NERC- the funding agency. Carter (Canada-Australia-Korea) said that the selection process is very similar to that of the UK. The national science committee will meet in March, so possibly current panel members will continue for the first year. Larson (US) said that nominations for SCICOM are considered by a nominating committee who will give a list to JOIBog to decide. He said he expects that a majority of current membership will continue, and said that those who want to continue, and whose term has not expired, should submit a letter to express their intention to continue. They do not yet have a mechanism to choose members for SciMP and SSEPs. This will likely be done by USSAC as a committee as whole, and Larson would like to see PCOM Chair there to advise on scientific balance. McKenzie (ESCO) said they try to nominate people in a way to attempt to balance northern and southern countries. The ESCO chair is the PCOM member, and will also be the SCICOM member. Thematic panel and service panel memberships were devised also to achieve balance between northern and southern countries, in proportion to the money they pay. The Italians pay more, and they have more representation on panels.

Humphris expressed her concern about thematic balance on panels, and said that one way to achieve this would be if national committees gave a list of names to choose from. Another option is that she corresponds with the national representatives and try to find together the best solution. PCOM agreed that Humphris will try to work with national committees in order to achieve the needed thematic balance. Natland asked if there is one chair or two in the interim panel. Humphris said there is one -John Ludden - but they have not yet discussed how the meeting will be organized.

6. Creation of PPGs

Humphris said that many have been suggested and clearly not all of these can be appointed. SCICOM should appoint the PPGs, so at this meeting only those PPGs that are key within the next six months should be appointed.

Mevel suggested a biosphere PPG and Humphris agreed that this is important. McKenzie suggested calling it the Deep Biosphere Pilot Project, to match the wording in the LRP. Shipley agreed with McKenzie and said it was the only PPG that he felt is necessary to set up at the present time.

PCOM Consensus 96-3-20
PCOM will set up a PPG entitled the Deep Biosphere Pilot Project PPG.

Suyehiro suggested that a PPG should be set up for borehole instrumentation. Humphris said it was an important group, but asked if this is critical within the next six months. Suyehiro said he thinks it is necessary, as there are a number of initiatives in various countries that are not well organized at present. It would be helpful to have one group coordinating this effort as proposals are being written. Mevel agreed and added that this group could also look at the CORK maintenance problem and long-term planning. Larson said PCOM should be careful and not have "PPG proliferation" as there will be only a limited number Fox pointed out that there should be more than six to preclude any ideas that each should get 1 leg/year. Humphris said that 7-10 PPGs is probably the limit. Carter said there should be cheaper ways of dealing with maintenance of downhole instruments so that the drillship does not have to be used. All this needs planning in a strategic way, and it is time to start. Larson asked whether the mandate would include all instruments installed in boreholes. The general feeling was that this would be the case. Mix questioned whether this was recreating the DMP? Mevel responded the idea was long-term observations, not downhole measurements. Humphris asked whether it should be called "seafloor" or "borehole" observatory. Brown preferred "seafloor" because not all instruments necessarily go down the borehole. Sager said it needed to be "borehole" or it would include any instrument on the seafloor. Humphris pointed out that part of the idea was that boreholes would be part of a seafloor observatory. Pearce said that an observatory program can be linked to other international programs like InterRidge and should not be limited to seismic instrumentation. Humphris said that her preference was to make it as broad as possible because the borehole nees to be linked to seafloor instruments. PCOM agreed to set up a PPG on long-term observatories. Kudrass was concerned that the ION community would be excluded because there are many other groups. Humphris responded that they would be an important part of the PPG.

PCOM Motion 96-3-21
PCOM will set up a PPG entitled "Long-Term Observatories" that is concerned with long-term instrumentation both in and around the boreholes.

Proposed: Larson, Seconded: Mevel *15 For, 1 Abstain*

Humphris requested that PCOM members provide names of possible Chairs and PPG members to her, and she will then circulate the list, together with draft mandates to PCOM by e-mail.

J. FY '98 Schedule Revisited

1. The FY '98 Schedule

Francis presented the two options, A and B, with the proposed Legs (Appendix). Option A includes the W. Antarctic Peninsula. However, in order to do this in the weather window, the hammer drill-in casing test would have to be postponed until FY'98, and could be included in a transit with the NERO operation. Option B excludes W. Antarctic Peninsula, but includes Mariana-Izu. This would make a very long transit to NERO (40 days transit). In both cases, the

ship and schedule would be well placed in early December for another high latitude leg. Francis said that both options can accommodate a Conoco project, which could still be inserted sometime in the summer.

Moore asked when is the dry-dock. Francis replied it will be in mid '99. Brown was concerned about abandoning Barbados CORKs when PCOM had made a resolution to do it if hammer drill-in casing was not ready. In terms of budget, in Option A there is the cost of an ice-breaker; in Option B there are the costs for reentry cones.

Natlanc commented that the original proposition for Leg 174B was to get to a location with a well-characterized image of the bottom to find out whether the hammer drill-in casing, with its reentry cone, could be put on to a sloping surface. That was why the MARK area was selected. In the Indian Ocean, the platform at Hole 735B is flat. There may be some sites near NERO or, if a test of spudding in to basalts was in order, there are some seamounts near Hole 735B. We currently do not know of a well-imaged sloping surface in the Indian Ocean. Francis commented that the NERO site(s) are sedimented, but drilling will require drilling into basement, so one suggestion would be to test the hammer drilling down that hole. This would be a different test from the original one.

Mountain asked what are the barebones operational costs of transit without scientists for 40 days, and where is the crew exchanged. Fox estimated about $360K. They would use not a full crew, but maybe JANUS people, people to fix labs etc. Mountain was concerned with efficiency of manpower with Option B. Larson said this is the wrong question to ask, as both options have long transit times so the question is what is the difference. Fox presented costs above standard leg costs for each option, assuming he could find a cheaper ice boat for $700K. Option A comes out at $1.542K, and Option B at $981K above standard costs.

Mevel said she understood why Kerguelen was not in the schedule because of the weather, but felt uncomfortable that Kerguelen and Prydz Bay were listed as alternates for a FY '99 leg when Kerguelen was much more highly ranked. Humphris pointed out that PCOM could schedule a leg into 1999. Pearce noted that if Kerguelen was included in Option A, then all the main groups - the LIPs group, the W. Pacific group, and the Antarctic group- would have a leg in the schedule which would be good for the community. Sager noted that Kerguelen doesn't cost $1million extra, so if it is placed in the weather window for the FY '99 schedule, the additional cost of the ice boat in FY'98 won't be repeated in FY '99.

Shipley pointed out that, without pre-judging how to make savings in the FY '97 schedule to meet the whether window requirements, 2 days needed to be found for Option B and 10 days for Option A. Discussion followed on the necessary characteristics of a site to test the hammer drill-in casing. Francis said the hammer could be tested in the vicinity of Site 735 or at the NERO site, and the casing possibly at Hole 735B. Some proposed imaging cruises to the SW Indian Ridge might reveal some sites. Natland pointed out that bottom images and a bare-rock outcrop are needed, not just bathymetry or sidescan. Fox felt there had to be some suitable sites near the Atlantic transform. McKenzie suggested testing on a flat surface would at least test the tool if not in the right environment. Humphris asked what the impact on the program would be if the hammer drill-in test does not happen until '98. Mevel said the program is not hurt if tests is delayed, and suggested the test be done later. Natland said the targets would have to be researched. He was also concerned that a delay would impact offset-section proposal development. Humphris requested views on whether to keep hammer drill-in casing in the FY '97 schedule. Pearce expressed his concern over the timing and felt he would prefer to see it

done properly and slightly later than it being rushed. Shipley felt that, based on previous experience, he would be in favor of delaying it.
Mountain mentioned there are good reasons for postponing the engineering development by six months and this will not take 10 days away from science. In addition, the probability of success will increase if the right place is found. Kudrass said there is not an immediate need to have this test now in view of legs likely to be scheduled for FY '98.

Humphris asked conflicted people to leave the room as the following discussion would lead to a vote. Humphris asked for a straw vote on delaying the hammer drill-in casing until FY'98: 10 in favor, 1 against, 5 abstentions (2 out of the room).

Humphris asked if there were any objections to removing Prydz Bay as an alternate to Kerguelen. Mix was suggesting it be "penciled in", but that was not Mevel's intent. Sager suggested leaving this issue until the Option was decided. Humphris said that the postponement of hammer drill-in casing implied Option A, since Option B did not include it. Mountain asked why there is no Option C to transit west instead of east. Francis said one cannot sail west in the Pacific because it is against the weather.

Mix suggested voting on the FY'98 schedule as far as Leg 182 to avoid the Kerguelen issue. Natland recommended adding a test of the hammer drill-in casing to Option B so that both are equivalent in that sense. Humphris called for a straw vote on Option A and B as far as, and including, Leg 182: Option A - 10 in favor; Option B - 1 in favor; Abstentions - 5 (2 out of the room).

Humphris then asked for a straw vote to add Kerguelen to the schedule: 12 in favor, 4 abstentions (2 out of the room).

Humphris then said the next issue was to deal with the 10 days that are needed to move the FY'98 schedule forward. Humphris reminded PCOM that there was a motion that, if time was available ,it would be split 50-50 between New Jersey and Barbados CORKs. The Option A schedule implies that 10 days have to be found. The options are to take it from Leg 174B or find it from other Legs. Brown pointed out that there are experiments running at Barbados that it would be nice to get the data from, so perhaps the time needed could be less. Humphris asked if there was a time estimate needed to retrieve the data. Francis responded that, with transit, it would be about 5-6 days. Sager asked if the schedule can be adjusted, and Francis responded the time had to come out of something. Mevel and Sager expressed concern about follow-up of instrumentation in holes and their impact on drilling ship time.

Mountain said that with respect to sea level issues, he has been fighting for a long time and finally shallow water drilling has been recognized as an area that needs effort. PCOM has been waiting for this opportunity for a long time. Humphris asked what legs would PCOM be willing to cut. Francis said that changes in the schedule should not be before April, as people have already purchased tickets. Mountain said Kerguelen might be restricted to shallower sites, resulting in shorter drilling time. Kudrass said Benguela is already penalized by long transit times. Francis said that the Prospectuses have appeared already up to Leg 173. Sager suggested that time could be taken out of those with a lot of drilling time, such as Iberia, 735B, and Legs 177 and 178. Humphris asked PCOM if they would vote on taking time from legs to accommodate Barbados CORKs, going against what was already decided, with all those limitations already discussed. This implies that six days have to be taken away from 97-98 schedule. Fox said that in FY' 97 the leg that stands out is the New Jersey margin, where there are incredible constraints on operations, it is high profile and need sextra time. Humphris asked if PCOM wanted to go against the original recommendation, and is willing to find time for

CORKs? Pearce suggested that the previous recommendation be removed and then decide on the issue without CORKs and New Jersey being tied together.

PCOM Motion 96-3-22
PCOM rescinds PCOM Motion 96-1-9, regarding the reallocation of time that may be available on Leg 174B as a result of not being able to do engineering tests on a 50-50 basis to leg 174A and LOI 69, in the light of new FY'98 schedule information and operational constraints.

Proposed: Pearce, Seconded: Brown *7 For, 2 Against, 3 Abstain , 4 Absent*

Humphris asked for a vote on whether PCOM wishes to take time off legs in '97 and' 98 to accommodate Barbados CORKing: 5 in favor, 3 against, 6 abstentions (4 absent). The vote did not pass. Humphris then asked for a vote on whether PCOM wishes to take time off legs to add time to New Jersey: 2 in favor, 7 against, 7 abstentions (4 absent). The vote did not pass. Ellins then pointed out that voting should be redone as there are people conflicted for '98, but not for '97, so they should vote on this again. Bob Carter is the only one to whom this applies. Taking this into account, there are now 2 people conflicted (Mountain, Natland) plus Larson who is absent. Humphris asked for a vote again if PCOM wishes to take time off legs in 97 and 98 to accommodate Barbados CORKing: 6 in favor, 4 against, 5 abstentions. The vote did not pass. Humphris then called for a vote as to whether PCOM wanted to take time off legs to add time to New Jersey: 2 in favor, 8 against , 5 abstentions. The vote did not pass. Hence the time from Leg 174B will be used to move the schedule forward to accommodate high latitude drilling.

PCOM Motion 96-3-23
PCOM approves the following program for FY'98 and beyond:

Leg 176 Return to 735 B
Leg 177 Southern Ocean Paleo Oceanography(464)
Leg 178 W. Antarctic Peninsula
Leg 179 Transit and NERO and Hammer Drilling
Leg 180 Woodlark Basin (447)
Leg 181 SW Pacific Gateway (441)
Leg 182 Great Australian Bight (367)
Leg 183 Kerguelen (457)

To assure appropriate weather conditions in the Southern Oceans, Leg 174B is to be shortened 10 days by delaying hammer drilling tests.

Proposed: Shipley, Seconded: Sager *12 For, 0 Against, 4 Abstain*

Humphris said PCOM needs to give the ADPG group some advice on drilling priorities, so a small group of Mix, Kudrass, Mountain, and Hay met to formulate some advice.

PCOM Consensus 96-3-24
PCOM, noting that logistical constraints will limit drilling and logging time off the West Antarctic Peninsula (scheduled as Leg 178) to about 37 days, recommends focusing on high priority objectives in this leg by:

1. Eliminating sites in Bransfield Strait from the drilling plan.

2. Increasing operations in Palmer Deep to include a short seismic survey, and quadruple APC coring at Site APSHE-13A (and/or its alternate) with penetration greater than 50 m if possible within the limits of seismic imaging and safety considerations.
3. Using ODP/TAMU estimates of time required for drilling, logging, survey, and transit. PCOM also notes that budgetary constraints preclude LWD operations on this leg.

PCOM Consensus 96-3-25
PCOM thanks the Antarctic DPG for its tremendous effort, on short notice, in developing a coherent and comprehensive drilling program for the Antarctic. Acknowledging this accomplishment, PCOM disbands the Antarctic DPG.

PCOM needs stronger justification for a CORK at Woodlark. The JOIDES Office will request this from the proponents.

2. Co-Chief Scientist Nominations

This part was not recorded in minutes to maintain confidentiality of the discussion.

K. FY '98 ODP Budget

1. FY '98 ODP Program Budget

Falvey reviewed the budget for '98 and said he will not know where to put the cutoff, until the fixed base costs are fine-tuned (Appendix 25 and 26).

2. PCOM Discussion and Prioritization of Budget Items

Falvey said he needs PCOM advice if there are items that need to be moved significantly in this list of priority. Fox said that numbers related to JANUS can come down to $300-350 K, or be reduced by a 1/3 to 2/3 because of the savings associated with Applecore. Humphris said that DCS development is a large number for '98 and would like to know if it is likely to change, now that the project is moving in a different direction? Fox said those funds are for the active heave compensation project. Goldberg pointed out a line item related to active heave compensation-logging evaluation, and asked why this is considered as a separate expense, when there is a heave compensator project which is allocated money. Goldberg suggested either to have it done at a different time or added to the rest of costs related to the active heave compensator project. PCOM recommended linking the two costs. Moran said that equipment for imaging cores (JANUS) and the system that Goldberg presented are similar and could be viewed together. Carter asked how the ranking was designed as leg-related costs for logging are low in the list when they should be a priority. Moran said that some costs estimates are related to JANUS Phase I completion, which should be considered priority when doing the budget. Pearce said that as '99 will be cheaper as there will be no ice boat, XRD replacement could be done then. PCOM agreed to defer XRD costs until FY '99. PCOM agreed to remove the expenses related to a microbiology lab on the ship from the list, until the results from the workshop are known. Regarding the costs related to GHMT in Woodlark, Goldberg said that priorities for that tool are low compared to other Woodlark tools. Goldberg talked about the Atlas of Borehole images and explained that it is taking advantage of FMS data and core data, looking at core images identifying facies. It would be a CD atlas that could be seen on screen. Humphris asked

if it could be postponed to a time when there is no ice boat, unless it would make a difference. Goldberg said it could start in one year, so PCOM decided to postpone this to a later date. Humphris asked what is re-curation. Fox said it is getting old cores in shape to be sampled at all the repositories

L. 5-yr Program Plan

1. Status of Science Implementation Plan

Humphris gave an overview of the evolution of the Science Implementation Plan since Townsville. She noted that since this was sent out in October, there has not been much feedback from PCOM. Humphris said that all comments have to be returned by January 2nd. Then she will revise and pass the document around once more before it goes to JOI. She also noted the PANCH recommendation on the five year plan and their concern that the topic " active convergent margins" is missing from the plan. Pearce disagreed and Shipley noted that the way the document is set up that active convergent margins is spread around. Humphris reminded PCOM that this document needs to interface with the LRP. PCOM agreed with PANCH that the diagrams need to be simplified and inserted into the text to avoid the appearance that the document is too proscriptive .

Humphris noted that this document is intended for ODPC, and it is not aimed at the scientific community. Falvey said that this is meant also as a document that can be shown to the national committees to get funding. Carter said that this document would be used by ODPC to audit ODP, and he expressed concern that this could be detrimental if objectives are not attained. Mix reiterated that ODPC wanted ODP to show how they would achieve the LRP and they wanted budget scenarios, and he said this is an opportunity to communicate to them a vision of what we will do as an integrated program. However, he pointed to the danger that ODPC may go through and select parts that they do not want to support if it remains too explicit. Humphris said maybe it needs to have an overarching statement at the beginning and then say that a certain number of legs is needed to achieve this. Falvey said that the LRP represents the global integrated strategy, but it is not good enough to justify how they will spend the money. A new level of detail is required, and it needs to be one that neither overspecifies nor underspecifies. Pearce noted that that the format of this is exactly as JOI requested. If requirements have changed then JOI must specify what they want changed. He pointed out that this was requested by ODPC for budgetary reasons. Pearce was concerned that this could be used to replace the LRP, which is not how it was intended.

Humphris noted that this document will be revised before it goes to NSF and the National Science Board. Fox said that ODPC wanted to see evidence that ODP is addressing high priority science problems of global importance. Humphris asked PCOM to scrutinize the document which must be sent to JOI in time for JOI to respond in terms of the budgetary implications and then to submit it to the EXCOM Agenda Book by January 10. Mix expressed concern about the budgetary stuff and felt that JOI will be making decisions regarding low and high budget scenarios, and he felt that PCOM should be making this decision. Falvey responded that he will be presenting options of service and technology that would or would not happen under different budget scenarios. The deadline for final input to Humphris is December 26; a revised version will then be sent to PCOM by e-mail to get the final comments by 1 January, and then a final version will go to JOI in time for them to add budget information to be included in the EXCOM Agenda Book.

M. Status of the Japanese OD-21 Program

1. International Workshop on Riser Technology

Takagawa reported on the Workshop on Riser Drilling held in Yokohama at the end of October that was organized by JAMSTEC/ORI/TEDCOM. About 95 scientists and engineers attended. It was held in response to an EXCOM motion suggesting such a meeting, with the objective to evaluate the technology needed to achieve the scientific goals of the LRP. The Workshop was based on a series of model holes from different tectonic settings. A set of recommendations came out, with Phase A being a riser for 2500 m water depth, and Phase B being a riser for 4000 m water depth (see Appendix 28).

Mountain said that seven model locations were evaluated by scientists and engineers, but he pointed out that there is a whole shallow water community that needs to be addressed and this was lacking at this Workshop. Natland said the Workshop was aimed at deep water riser drilling as shallow water riser drilling already exists. Larson emphasized that the model holes were not chosen by committees, but by individuals. Larson also commented that TEDCOM found this exercise very useful, although Humphris pointed out that this same exercise had been done in the early 1990's. Mountain said that he applauds the Japanese effort, but it must be made clear to the community that the OD-21 vessel is not the vessel for very shallow water objectives.

2. CONCORD

Suyehiro reported on a meeting held in Tokyo of a Steering Committee that is setting up the CONCORD workshop. This will be held in Tokyo on 22-25 July 1997. The objective is to identify the science that should be targeted to take advantage of the enhanced capabilities provided by riser drilling. It is planned that there will be engineers attend the meeting to interact with the scientists. This meeting is critical to getting the funding to build the OD-21 vessel, and it is very important that it is an international meeting. In addition, JAMSTEC and ORI have asked JOIDES to be co-hosts of the meeting. It is an open meeting, and they expect about 100 people to attend.

Humphris said that this meeting is very important for the future of ocean drilling, and PCOM has to make sure that this is going forward and that the best representation from the drilling community is there. Suyehiro said that Japan is trying to secure some funding to support scientists to go, but he can't promise anything yet. PCOM agreed to have JOIDES as one of the hosts of the meeting.

N. Rock Drilling

Johnson presented over-the-side rock drills as they pertain to ODP's interest in alternative platforms. He presented his experience with Williamson and Associates, who built the 3 m drill for the University of Washington (which was lost), the 20 m drill for the Japanese Metals Mining Agency, and who are in the process of designing and building the PROD (Portable Remotely Operated Drill) which will drill to 100 m in a hard-rock environment.

The Japanese over-the-side drill is capable to water depths of 6000m. It has a rotating carousel with 25 slots in which drill pipe casing or instruments can be accommodated. This drill can be pogoed around to collect twenty, 2 m cores, or can be used to get a long sample. The

Williamson 20 m drill can be deployed by the R/V Thompson or other UNOLS fleet vessels. This drill has extensible legs and is capable of coring manganese crusts. All Williamson drills have control over rotation speed, bit weight, and flushing water pressure to minimize the risk of getting stuck. They also have thrusters, four television cameras for real time observations, and can specify landing sites.

PROD is a portable, sea floor drilling and coring device which will be available for lease in the first quarter of 1998 from Benthic Geotech Pty. Ltd., an Australian consortium. PROD is expected to be finished in late 1997, and operations will start in 1998. PROD will be able to drill to 100 meters in 2000 meters water depth. The drill is weight-limited so, for shallower cores, can drill in deeper water.

Johnson discussed the matter of access to these drills. Negotiations are underway with MMAJ to see if they will consider outside users. One problem is that the MMAJ drill is built in such a way that it must be used with a special fiberoptic cable which is on an expensive Japanese ship. Johnson is trying to negotiate with MMAJ to permit use of their drill with the ROPOS cable and winch, which is also expensive, but then the MMAJ drill can be adapted and deployed on the R/V Thompson.

In contrast, Benthic Geotech is actively seeking users of PROD. There will be a cable and winch that is part of the package. The cost will be about $10,000 per day and a stand-by rate of half that amount. The consortium has not finalized this yet. They are actually looking for outside users for about 25% of the time. The Australian Consortium does not want money from ODP but want a structure that organizes potential users into a consortium partner. Johnson asked whether PCOM might wish to recommend to SCICOM that a small group look into these alternative platforms and determine the type of relationships there should be between them and ODP.

Humphris suggested that it would be useful to consider sending a JOIDES Liaison to one of the PROD meetings. Sager concurred, saying that this was a good idea, and that he supports ODP involvement with this group as it may provide an outlet for science that cannot be carried out by ODP now. Mountain asked about the efficacy of PROD in penetrating sediments in shallow water. Johnson replied that it appears that some sediments respond well to diamond drilling, while in other cases they do not. Johnson cited an example of an experiment off Hawaii drilling into sand. There was little recovery of the sand but that would have been different if they had used the right bits. PCOM decided by consensus that they would send a liaison to one of the meetings of the consortium. Humphris will write a letter to this group expressing PCOM's desire to send liaison.

PCOM Consensus 96-3-26
PCOM will send a liaison to one of the meetings of the Australian Consortium to look into developments in over-the-side rock drills, and to determine the type of relationships there should be between them and ODP.

O. PCOM Correspondence

1. Response to K. Miller

Miller requested that some on-shore drilling being done in conjunction with Leg 174A be designated as Leg 174X, as had been done in a similar situation for Leg 150. All results from both shore and offshore drilling will be published in a special volume. Leg 174X cores will be stored at Rutgers at no cost to ODP.

PCOM Consensus 96-3-27
PCOM, in response to a letter from K. Miller, agrees that on-shore drilling done in conjunction with Leg 174A be designated as Leg 174X. Leg 174X cores will be stored at Rutgers at no cost to ODP.

2. Response to H. Dick

Dick had requested some extra time be added to Leg 176 for some work in association with a VSP experiment. PCOM agreed that they cannot add extra time due to scheduling limitations. Humphris will write a letter to Dick in response.

3. Response to R. Von Herzen

Von Herzen alerted PCOM to a problem relating to the incorporation of ancillary programs into scheduled Legs. He cited a recent unsuccessful attempt at getting some measurements scheduled on core for Leg 174A, and requested PCOM consider how communication related to ancillary projects can begin early in the process.

Sager said that by the time a program gets to the point where it is scheduled, it is already fully booked. Natland said that he is opposed to people crashing the program late in the day. Natland said that in the new structure, opportunities to link ancillary programs with proposals can be identified by the SSEPs and PPGs. Humphris suggested that a mechanism might be by a letter of intent to the JOIDES Office for certain projects or experiments, which can be routed to the SSEPs or PPGs. Humphris agreed to include some mechanism in the rewriting of the proposal process.

P. New Business

1. Future Meeting of SCICOM and OPCOM

A conflict regarding the dates of the first SCICOM meeting has emerged. The original meeting was planned for 14- 17 April, in College Station, but it is in conflict with the Lisbon port call and several people cannot attend. It is not possible to move the meeting to a week later due to space problems at TAMU. Therefore both dates and locations must be changed. PCOM agreed that SCICOM will take place on 22-24 April in Hawaii.

2. Other Business

a) European Technology Meeting

Kudrass reported on a meeting of European ocean drilling scientists with industry, which took place in the autumn of 1996. Drilling targets related to the objectives of the ODP LRP were discussed. Tim Francis, representing ODP-TAMU, gave a presentation on ODP technology. The

industry is drilling in water depths of 2500 m in very calm environments (Gulf of Mexico) and water depths of approximately 1000 meters in rough waters in the North Sea with a drill ship. Drilling in deeper waters will be done by semi-submersibles. On the topic of joint ventures (the slim line riser, for example), there was no interest expressed by industry in doing development with ODP, even if they are funded to do so. Kudrass said that it was made very clear at the meeting that the companies from industry have their own agendas and work very quickly. They are also concerned about losing the competitive edge if they work with a number of groups and the information becomes public. This is especially a concern with respect to ODP, which is group of organizations who are bound in MOUs to make their results public.

b) The International Continental Drilling Program (ICDP)

The International Continental Drilling Program (ICDP) is a consortium which was established to address a spectrum of scientific problems that will improve our understanding of the Earth's lithosphere. Other countries are expected to join with Germany, the USA, and China in the near future. Field drilling programs will be in Hawaii, Chicxulub Crater, and high resolution record in lakes, etc. Dr. Christian Paterman, Chair of the Assembly of Governors (AOG) of the ICDP, has written to the EXCOM Chair to request liaisons from JOIDES's EXCOM and SCICOM to the ICDP's AOG and Executive Committee (EC). The ICDP is interested in having a liaison from SCICOM to the ICDP equivalent body in their structure, the Executive Committee (EC). Kudrass noted that this request provides an opportunity to cooperate with another global science program. He added that the ICDP is a spin-off from the KTB project. The consensus from PCOM is to send a liaison. Mevel noted the advantage of having a close relationship with a group which is potentially seeking the same funds in each country. Roger Larson volunteered to serve in the capacity of a liaison. Francis noted that Roland Lawrence, the U.S. engineer for Continental Scientific Drilling, is based at ODP TAMU.

PCOM Consensus 96-3-28 PCOM will send a liaison to the meetings of the International Continental Drilling Program (ICDP).

c) Iceboat in Antartica

On previous high latitude Legs there have been small science programs mounted on the iceboat, so PCOM should be aware of this opportunity. The type of science needs to be "non-interfering"; for example, ornitology. Humphris noted that one of the nominees for Co-Chief has already communicated with TAMU on this issue.

d) OPCOM membership

Falvey asked how membership of OPCOM should be dealt with. It needs to be a mix of U.S and non U.S. members, and requires two SCICOM members (besides the Chair), and three others from outside the community. Humphris said she would be willing to take names and that those people should be interested and experienced in dealing with logistics and budgets. Shipley recommended that Humphris put together a slate of names, with help from the non-U.S. members, and they communicate by e-mail. Perace pointed out that Alaister Skinner would be there as the TEDCOM liaison.

Q. Other Motions and Action Items

Suyehiro returned to TEDCOM minutes and commented on problem of having the *JOIDES Resolution* listed as the sole vessel for drilling for OD 21 through 2008. Natland will communicate with Skinner on this issue and have TEDCOM minutes changed before their next meeting.

PCOM Motion 96-3-29
PCOM would like to express gratitude to both the Thematic Panels (LITHP, SGPP, OHP and TECP) and Service Panels (IHP, DMP, and SMP) for their hard work and valuable contributions to the drilling program under the present structure. We anticipate continuing interactions with many of the members of these panels within the new organization structure. PCOM expresses similar gratitude to those members of panels that will be continuing in the new structure (SSP, PPSP, TEDCOM).

Proposed: Johnson, Seconded: Larson *Unanimous*

PCOM Motion 96-3-30
PCOM thanks Tom Shipley for his years of service on PCOM, noting that this is the end of his second term. His long experience in DSDP/ODP yielded insightful comments on critical issues. We hope to see him continue in ODP/OD21 in the future.

Proposed: Moore, Seconded: Brown *Unanimous*

PCOM Consensus 96-3-31
PCOM thanks Tim Francis for his long and continuing service to ODP, first as the UK' s representative to PCOM, and more recently as ODP/TAMU's liaison. We know that OPCOM will start off on the right foot as Tim continues in that role to take the science dreams of JOIDES and "make them real".

PCOM Consensus 96-3-32
The PCOM Chair notes that a number of long-serving PCOM members will not be carried forward as members of the new SciCOM.
PCOM Chair greatly appreciates the support these and other PCOM members have offered at this difficult time of transition to the new system.
The quiet logic of Kiyoshi, gallic flair of Catherine, wisdom of Alan, pungent comments of Tom, dogged determination of Will will be greatly missed by the SciCOM progeny. We thank them for their unremitting hard work on behalf of ODP, and wish them every success in their future PCOM-free lives.

PCOM Consensus 96-3-33
PCOM thanks Greg Mountain and Columbia University for efficiently hosting its Annual Meeting, and for developing unique field experiences ranging from the microbes of Biosphere II to the distant galaxies viewed from Kitt Peak. PCOM notes Greg's exceptional ability to orchestrate this meeting in a remote location, and to make management of complex meeting logistics look simple.

APPENDIX LIST

Appendix 1 - NSF Budget
Appendix 2 - ODP Budget
Appendix 3 - Timing of Phase III decisions
Appendix 4- JOI Liaison Report
Appendix 5- Downhole Losses since Leg 101
Appendix 6- Proposed extension to Downhole Meas.lab. on *JOIDES RESOLUTION*
Appendix 7- Restructure Process at TAMU
Appendix 8- Recent Logging Results
Appendix 9- Inmarsat B SeaNET System
Appendix 10- Upcoming Logging Operations
Appendix 11- Site Survey Considerations
Appendix 12- Spreadsheets with special logging tool deployments, showing the costs associated with each
Appendix 13- Logistical and budgetary constraints on 1998 ODP Scheduling
Appendix 14- TECP aims and objectives
Appendix 15- TECP consistent themes
Appendix 16- Tectonics related drilling to 2003
Appendix 17- JANUS developments I
Appendix 18- JANUS developments II
Appendix 19- Publication of books of the Initial Results will be extended out to Leg 175
Appendix 20- Sampling and Curatorial Workshop I
Appendix 21- Sampling and Curatorial Workshop II
Appendix 22- ODP sample Distribution Policy (6 pages)
Appendix 23- Co-chief reviews
Appendix 24- SciMP reporting path that allows operational advice to flow to OPCOM and then to JOI
Appendix 25- Draft FY98 X-base allocations
Appendix 26 - Draft FY98 X-base allocations
Appendix 27- Proposal Review Procedures-Subcommittee
Appendix 28- Workshop on Riser Drilling: Executive Summary and recommendations for] Phase A being a riser for 2500 m water depth, and Phase B being a riser for 4000 m water depth (4 pages)

APPENDIX 1
NSF Budget

NSF BUDGETS

	FY 1996	FY 1997
NSF TOTAL	3.22 B	$ 3.27 B
OCEAN SCIENCES	194 M	202 M
NSF - ODP	39.1 M	39.2 M
OPERATIONS	27.7 M	27.4 M
USSSP/USSAC	5.4 M	5.7 M
GRANTS	6.0 M	6.1 M

APPENDIX 2
ODP Budget

ODP BUDGETS

1997 PROGRAM PLAN APPROVED AT $ 44.4M

NSF - 62% OF COST
5 FULL MEMBERS -2.95M
CAN-AUS-KOR - AT 75%

96 RESIDUAL FUNDS - ?

1998/1999 BASE BUDGET COMPARABLE TO 1997

MAJOR ISSUE IS JR DRY DOCK/REHAB

UP TO $6M IN NEW FUNDS
WILL BE SPLIT BETWEEN '98 AND '99
OUTSIDE EXISTING BUDGET ???

MAJOR ISSUE IS NUMBER OF PARTNERS

1999-2003 RENEWAL PERIOD

APPENDIX 3

Timing of Phase III Decisions

PHASE III DECISIONS - 1997 TIMING

FEBRUARY	ODP COUNCIL MEETING
	SCIENCE MANAGEMENT / IMPLEMENTATION BUDGETS / RESOURCE STRATEGY
	PRELIMINARY STATEMENT OF INTENT FROM PARTNERS
APRIL	SUBMISSION 5 YR PROGRAM PLAN
	1998 -- 2002
MAY	REVIEW PANEL FOR 5 YR PLAN
JUNE/JULY	ODP COUNCIL
	FINAL DECISIONS FROM PARTNERS
JULY	NSF DECISION ON DRY DOCK/REHAB NSF DECISION ON 1999-2003 PROGRAM
AUGUST	NSF NATIONAL SCIENCE BOARD
	FUNDING APPROVAL 1999-2002

Item B (2) JOI Liaison Report

(a) RFP's

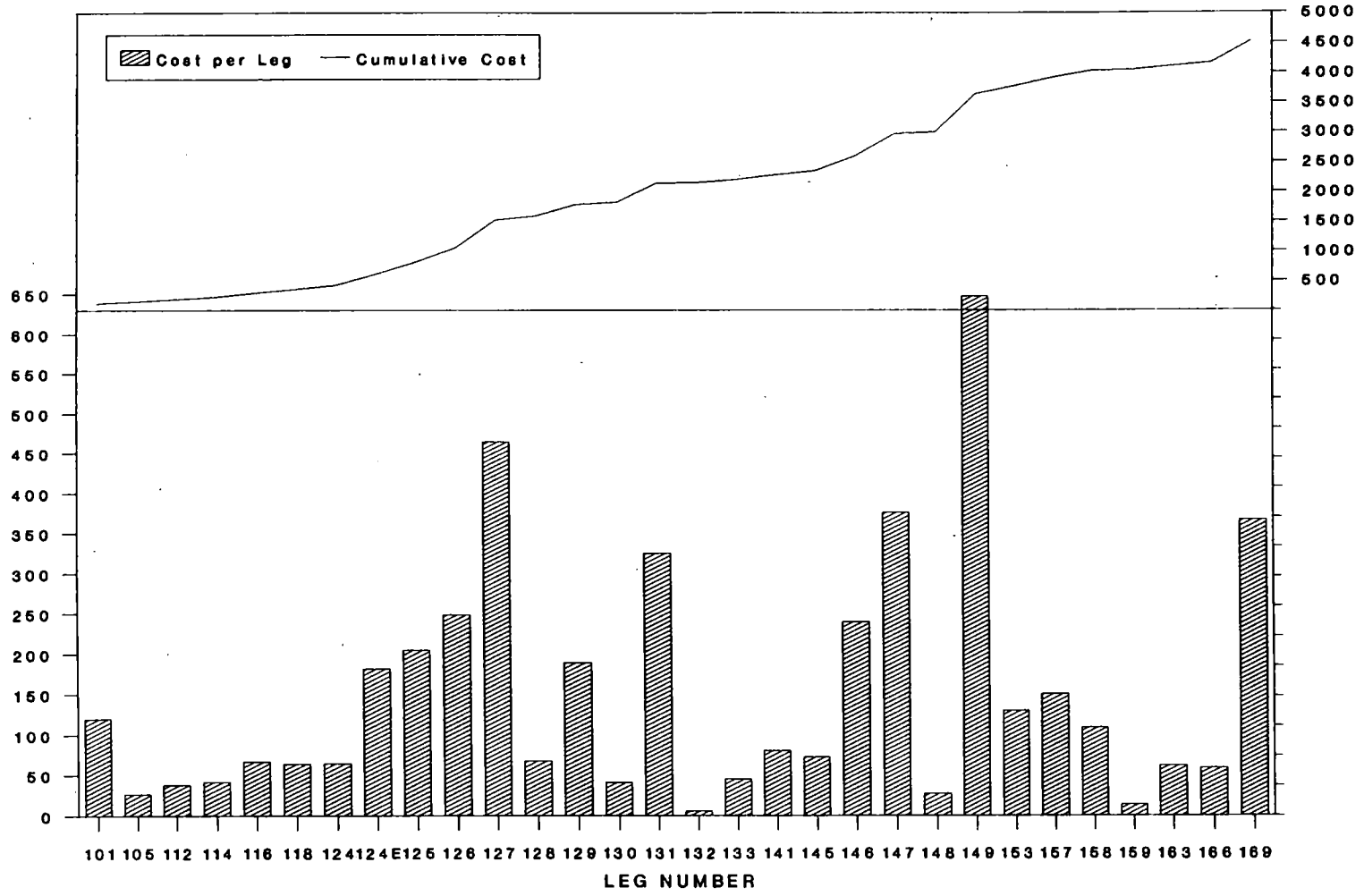
1. Wireline Logging Services and Site Survey Data Bank

- RFP's have been issued and will close on 17 January, 1996
- An assessment panel, consisting of up to 5 non-conflicted EXCOM members, will be appointed by JOI
- Decision should be available for EXCOM review in February

2. JOIDES Office: 1 Oct, 1998 to 30 Sept, 2000

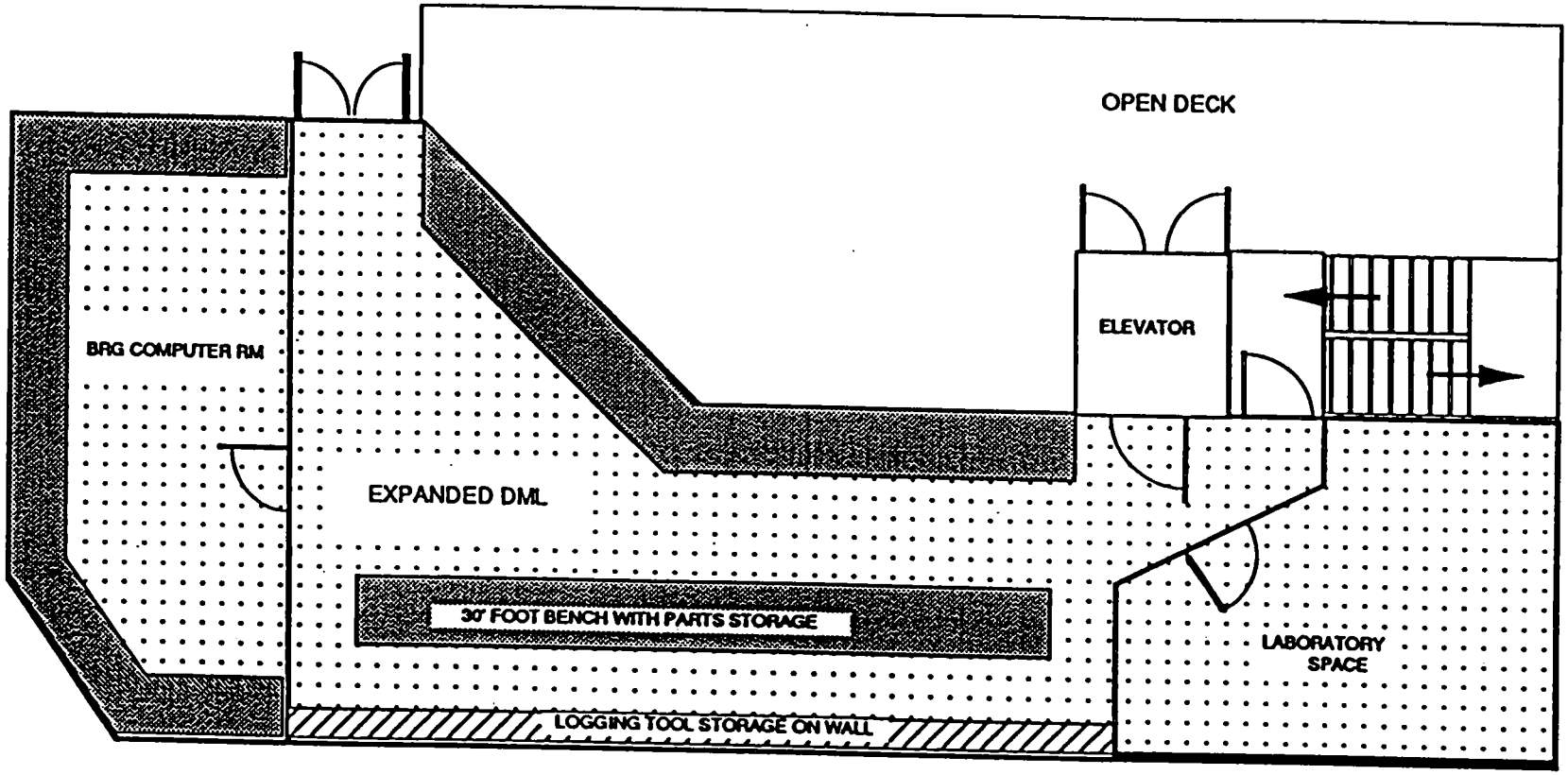
- RFP will be issued in late February, 1997
  - evaluation and decision is expected to be completed in time for review at June EXCOM, 1997
- Responses will be accepted from each non US JOIDES member
- An assessment panel, consisting of up to 5 non-conflicted EXCOM members, will be appointed by JOI. The following selection criteria will be used:
  - scientific leadership and management qualities of the proposed PCOM Chair
  - infrastructure available at the host institution
  - estimated cost of operating the office at the proposed location
  - independent support, if any, that may be offered by the relevant National Committee or funding agency.

Ocean Drilling Program
Downhole Losses
$ in Thousands



October 15, 1996

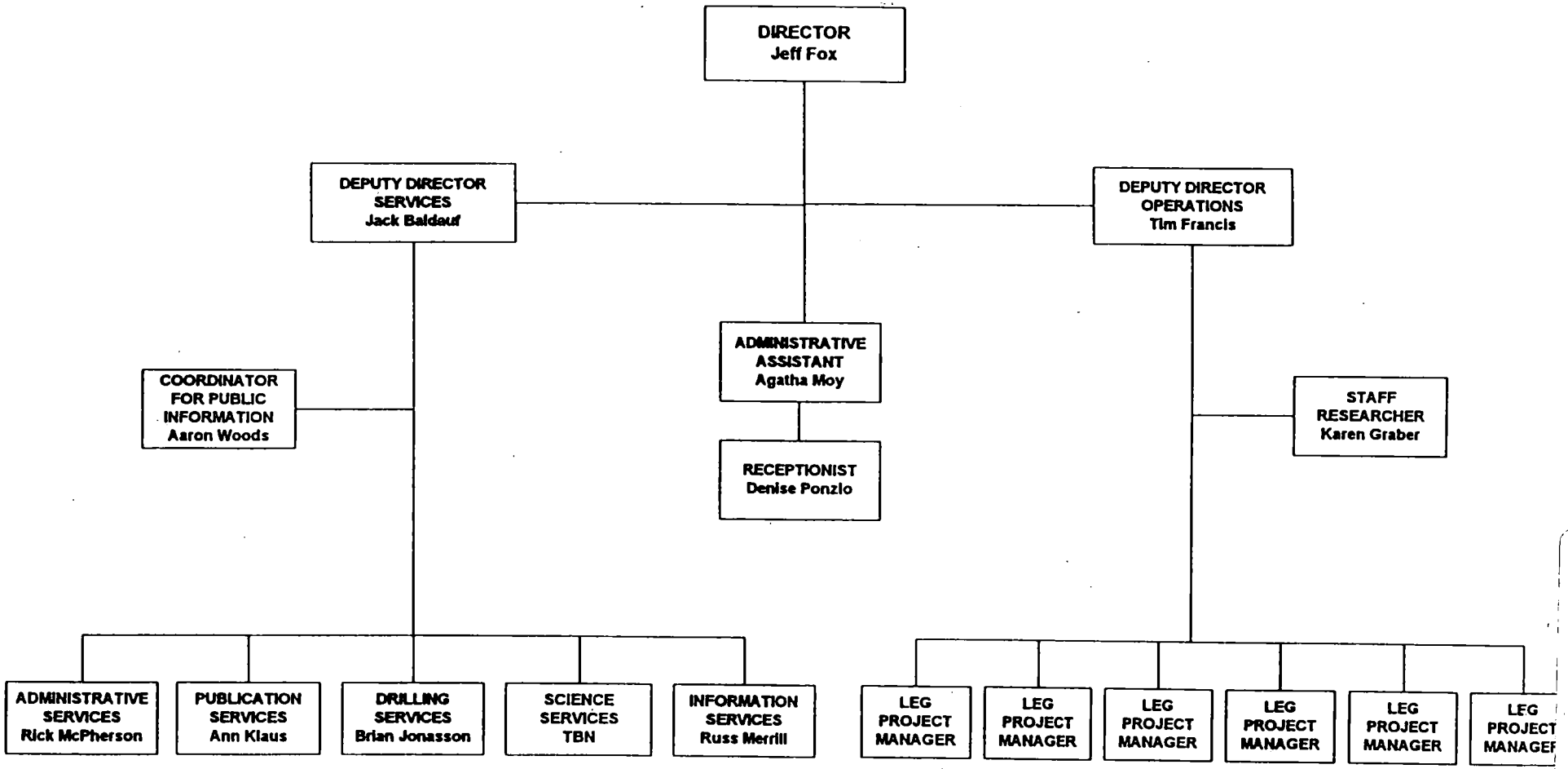
APPENDIX 5
Downhole Losses Since Leg 101



PROPOSED EXTENSION TO DOWNHOLE MEASUREMENTS LAB AT DECEMBER 1994 DRY DOCK

APPENDIX 6
Proposed Extension to Downhole Meas. Lab.
on *Joides Resolution*

OCEAN DRILLING PROGRAM
TEXAS A&M UNIVERSITY



(Staff Scientists and Engineers from functional departments)

APPENDIX 7
Restructure Process at TAMU

RECENT LOGGING RESULTS

Leg 168: ***Juan de Fuca***

Triple combo, FMS/Sonic, and GEOCHEM tools used
1 hole logged
SLIP 'seismic' software installed and tested
Shipboard DHM Lab upgrade completed in port
C Goncalves (LUBR), Y Sun (LDEO)

Leg 169: ***Sedimented Ridges***

Triple combo, FMS/Sonic, & Becker T-tool (hi-T) used
3 holes logged: 856H (Bent Hill), 858G (Dead Dog), 1037B (Escanaba Trough)
Excellent FMS logs from 85 to 495 mbsf in 856H distinguish massive and disseminated sulfides and show evidence of faulting.
Temp log in 858G increase from 9°C to 228°C at 9 m.
Max temp 272°C at 206 mbsf.
G Guerin (LDEO), G Iturrino (LDEO)

Leg 170: ***Costa Rica***

LWD logs over 1065 m in 3 holes: 1039D, 1040D, & 1040E
Sonic combo run in poor hole conditions at Site 1040 from 100 to 233 m.
Excellent LWD data recorded with difficult drilling in deviated holes & thru hard layers
Unprecedented comparison of logs between reference and underthrust sediments
SeaNET Inmarsat-B system deployed and successful
G Myers (LDEO), S Saito (LDEO)

Inmarsat B SeaNET System test on Leg 170

- Hardware and 'user-friendly' software performed well having high S/N ratios and consistent signal during transmissions of log data

- Antennae was installed on DP shack away from personnel and ship heading was maintained for the duration of each transmission.

- Average throughput 35-45 kbps for 5-10 min transmissions

- Current VSAT system will remain on board as the primary system for transmitting log data

- SeaNet agreed to leave Inm-B system on the ship for Leg 171 as a VSAT backup and for testing of cc.mail by TAMU.

UPCOMING LOGGING OPERATIONS

Leg 171A: ***Barbados***

LWD standard tools planned for 4 holes
Sonic log scheduled for 1 hole
Replacement of Wireline Heave Comp pump
S Saito (LDEO), C Major (LDEO), D Goldberg (LDEO)

Leg 171B: ***Blake Nose***

Triple combo with IPL, FMS/sonic, & GHMT scheduled
Logging planned in 4 holes
Replacement of Wireline Heave Comp pump (con't)
I Alexander (LUBR), S Marca (IMT)

Leg 172: ***Atlantic Sed Drifts***

Triple combo with IPL & FMS/sonic scheduled
Logging planned in 2 holes
T Williams (LUBR)

Leg 173: ***Iberia***

Triple combo with IPL, FMS/sonic, & GHMT scheduled
Possible test of image scanner for core-log correlation
Logging planned in all holes
V Louvel (IMT), A Newton (LUBR)

Site survey readiness classification of proposals considered during July 96											
Global ranking	1. Viable for 98		2.Possibly viable for 98; likely for 99			3. unlik. 98 possible 99		4.impos. 98	5. impos. 98	6.Not consid.	7.Not consid.
Fall 96	1A	1B	2A	2B	2C	3A	3B				
T1,L6,S6	447										
T2,L2			431*	431*							
T4,L7,S9	450										
S1		452-502									
S2,T5		445									
S3,O3	367										
S4	LOI-69										
L0, S13	DCS										
L1, T7				457							
L2	NERO		431(W.P)								
L3, T3, S8		451									
L4,S5,T6,O9	472										
L5				431(J.T)							
L9					426*						
O1, S7	464										
O2, S10, T10				441							
O5			503								
O6 (482+489)		489				482					
O8,T9		485									

* --- see detailed comments.

APPENDIX 11
Site Survey Considerations

Special Tool Deployments

#	Proposal	GHMT	BHTV	GLT	ARI	WST	LWD	VSP	DSI	SST	UBI
	Leg 176 - Return to 735B		$13640	113,659	30,789			$34,778	$33,527		
79	Mesozoic Somali Basin	$37,072	$13,640	$83,019				$34,778			
367	Great Australian Bight	$41,872		$83,019		$16,931					
431	West Pacific Geophysical Network		$13,640	$79,019	$30,789						
441	Southwest Pacific Gateway	$46,672									
445	Nankai Trough						$490,340	$34,778			
447	Western Woodlark Basin	$40,672	$13,640		$30,789			$34,778			
450	Taiwan Arc	$41,872	$13,640		$30,789		TBD	$34,778		$3,327	
451	Tonga Forearc		$13,640	$83,019	$30,789						
452	Antarctic Peninsula	$47,672				$16,931	$331,500				
457	Kerguelen Plateau		$13,640	$83,019	$30,789	$16,931			$33,527	$3,327	
464	Southern Ocean Paleoceanography	$39,472									
472	Mariana-Izu Margin	$37,072		$80,519	$30,789						
485	Southern Gateway	$44,272	$13,640			$16,931					
490	Prydz Bay	$43,072				$16,931					
503	Cenozoic Glacial History	$40,672				$16,931					
L72	Engineering Test of LWD						$300,000				
508	NERO				$30,789						$30,789

APPENDIX 12

Spreadsheets with special logging tool deployments, showing costs

CONSTRAINTS ON 1998 ODP SCHEDULING

Proposal			Acceptable Months for Scheduling												Heave Limits	Jurisdiction	Iceboat	Drilling Costs
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec				
079		Somali Basin	X	X	X	X	X	X	X	X	X	X	X	X		International		$553K
367		Gt. Aust. Bight	X	X	X								X	X	2/3	Australia		$173K
431		W. Pacific Geophys.					X	X								Japan/ International		$893K
441		SW Pacific Gateway	X	X								X	X	X	0/2	New Zealand		$ 47K
445		Nankai			X	X	X	X								Japan		$416K
447		Woodlark Basin					X	X	X	X	X	X	X	X	0/1	Papua New Guinea		$506K
450		Taiwan Arc-Cont.		X	X	X	X	X								Taiwan/ Philippines		$554K
451		Tonga Forearc					X	X	X	X	X	X	X	X	0/1	Tonga		$ 90K
457		Kerguelen	X	X										X	1/1	Australia/ France		$ 16K
464		S. Atlantic Paleo	X	X										X		S. Africa, Norway, International		$ 45K
472		Mariana-Izu			X	X	X	X								Japan/ International		$164K
485		Southern Gateway	X	X									X	X		Australia		$268K
	Ant. DPG1	West. Ant. Peninsula		X	X										0/4	Antarctic Treaty	$1.0M	$ 25K
503	Ant. DPG2	Weddell Basin	x	X	x											Antarctic Treaty	$1.4M	
490	Ant. DPG3	Prydz Bay	X	X												Antarctic Treaty	$1.4M	$ 33K
508		Nero	X	X	X	X	X	X	X	X	X	X	X	X		International		$ 91K

X: whole month; x: 1/2 month

TECP AIMS AND OBJECTIVES 1994-1996

' 93 Dec: Inherited TECP; dynamic but needed focusing and more "ocean-going" input
' 94 Jan. Kyoto "Ocean drilling in the 21st Century"

TECP stress on drilling "young active systems" and on "tectonic architecture"; plan though 2003

1994 March Hawaii; many new proposals for Pacific;
Oct. Cyprus: Revision of Whitepaper with stress on extensional, contractional and vertical kinematic environments and on in situ observations of processes; Structural data collection report

1995 March Los Angeles; stress on recording and archiving structural measurements at sea; initial input into draft LRP draft

Oct. Antalya; Restress of structural data input and priorities

1996 March San Lois Obispo; plan for panel reorganisation
Oct. Oman; big resurgence of new tectonics related drilling programmes; includes a draft drilling plan and suggestions for planning groups

Currently a substantial and increasing demand for tectonics related deep ocean drilling: need to satisfy as far as possible in science plan

TECP CONSISTENT THEMES

-Need for 2 drill ships in future, 1 for deep continental margin objectives and one to study shallow active systems (single deep drilling ship will NOT satisfy all tectonics objectives)

-Support for riser drilling for better recovery and drilling in unsafe areas (e.g. passive margins)

-Support for DCS to tackle structure of young oceanic crust

-Support for in situ measurement of fluids and gases (e.g. decollement zone studies); stress.

-Support for collection and archiving of structural data at sea (concern that not yet completed by JANUS Phase 1; essential to complete); Brown report

-Need to follow through these themes in new science plan

- Concern about balance, to ensure Tectonics themes not submerged in future.
- Concern that response to "external input" is even handed.

TECTONICS RELATED DRILLING TO 2003

-Good agreement with PCOM draft science plan, but concern that TECP science should not be lost sight of in future

Drilling plan: Dynamics of Earth's interior

For next 3 or more years:

Extensional boundaries

Deformation partitioning within the lithosphere due to extension

- active low angle, e.g., *Woodlark*
- conjugate margins, e.g., *Newfoundland/Iberia, Great Australia Bight/Antarctic, NE Atlantic (volcanic rifted margins), Gulf of Aden*
- Transforms, *e.g., Tasman fracture zone, Vema/Romanche*
- Ocean crust, *e.g., W Atlantic, Angola basin, Angola abyssal plain*

Convergent boundaries

Deformation partitioning, fluid flow, and exhumation during lithosphere convergence

- deformation and fluid flow, *e.g., Nankai, Barbados, Cascadia, Costa Rica*
- Collisional processes, e.g., *Taiwan, Timor, E Mediterranean*
- arc evolution, e.g., *Tonga, Okinawa trough, S China Sea*
- fluid flow/mass balance, e.g., *Izu-Mariana, Costa Rica*
- Tectonic erosion, e.g., *Peru-Chile, Tonga, Japan Trench*

Earthquake mechanisms

- monitoring seismicity using global seismic network and downhole geophysical observatories, e.g., *West Pacific seismic network and related downhole measurements*

Program planning groups

TECP proposes following program planning groups:

- downhole measurements and observatories
- conjugate margins
- seismogenic segmentation (convergent margins)

APPENDIX 17
JANUS Development I

Status of Janus Development

San Diego Port Call Meeting

UG1: Operations, Corelog, Sampling, Depths
UG 2a: MST - bugs not yet fixed
UG 2b: Paleo - first shipboard test - Leg 170
UG 3: Index,Vel/shear - bugs not yet fixed
UG 4a: Chemistry- SC currently reviewing for 171B deployment
UG 4b/5: Applecore program selected for visual core description, tested on 169 and 170 - not yet integrated into database - will form the basis of Digital Core Description

Deployment

Scheduled for 171B & will include: UG 1 through 4a; w/ 4b and some 5 Applecore components

1 Tracor developer sailing on 171A, 2 on 171B

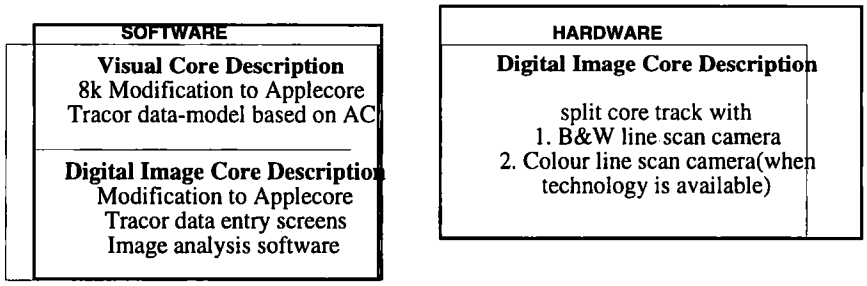
JOI Janus Steering Committee

Digital Image Core Description

Workstatement for hardware/software drafted in March 96

UG4b/5 meeting in Halifax defined core description changes to Applecore - Digital Image needs also reviewed

SC Meeting in Oct 96 - better definition of our proposed approach



JOI Janus Steering Committee

Future

1. Age/depth function *
2. Data model for 4b/5*
3. Colour reflectance*
4. Thin section* & hardrock entry screens for phaseII
5. Paleomagnetics* (cryomag, spinner)
6. Thermal conductivity
7. Processed logging data model
8. QC for remaining chemistry screens

Recommendation: Complete all of these with 2 Tracor developers managed within Tracor for an additional 6 months (sailing 1 leg with a TAMU developer) , including the data model behind phase II. Phase II should be completed using Applecore modification, off-the shelf image analysis software, and a line scan camera with a simple dedicated track.

Recommendation: The future of Janus requires that any new equipment/methods include Janus data model additions and user-friendly data acquisition interfaces. SC recommends that a mechanism for this to occur be implemented.

Publications - Long Term Objective (Outline)

Leg number	160	161	162	.....	168	169	.....	175	176	.....
Open Literature										
Scientific Results										
Traditional book										
500 page book										
CD-ROM										
Web abstracts										
Web										
Initial Reports										
Traditional book										
CD-ROM										
WWW										

Publications Steering Committee - Draft Mandate

1. **To provide ODP-TAMU with advice and recommendations on the design and function of a new format for electronic ODP Proceedings volumes**

2. **To evaluate new formats for electronic CD-ROM volumes as well as a WWW version of the Proceedings; starting with the Initial Reports volume, followed by the CD version for the SR and WWW versions for each volume**

3. **To evaluate a new electronic IR design and recommend to JOI a timetable to move toward complete electronic publishing**

4. **Develop a strategy to ensure that an archival record of all Proceedings material is produced, which will ensure that ODP material is accessible to the user community in the future.**

JOI Sampling and Curation Workshop

New Policy

Moratorium/Leg-Specific Sampling

- Sampling strategy is developed by the Sample Allocation Committee (SAC) and published in the prospectus
- Scientists prepare sample requests using the strategy and submit to SAC; SAC decides
- If SAC is deadlocked on a request, Curator /CAB onshore decides
- Scientists are obliged to submit publications (28 months) and data (5 years) and return residue/unused samples

Post Moratorium Sampling (after 15 months)

- Requests approved if working core is available, scientist has the resources to complete, and the study time frame is 2 to 3 years
- Requests where no working core is available need CAB approval to sample the permanent archive
- Scientists are obliged to submit a status report (36 months) and data (5 years) and return residue/unused samples

JOI Sampling and Curation Workshop

Changes to the Policy

No limit on volume or frequency of samples; the only real limit is preservation of the permanent archive15 month moratorium period

Minimum permanent archive (1/2 of the core from the deepest hole per site - allows for whole round removal of this archive, if needed)

Formalized sampling strategy

Enforcement of obligations

Sampling of DSDP and ODP archives after depletion of working core

Pre-moratorium sample request approval by SAC

Curatorial Advisory Board decides on (a) post-moratorium sampling conflicts (b) archive sampling (c) advises ODP/TAMU Curator

JOI Sampling and Curation Workshop

Recommendations

- ☆ Request approval of the new policy with CAB and SAC - contingent on EXCOM and NSF approval
- ☆ Recommend start date of policy to dovetail with new program structure
- ☆ Request that the appropriate Joides committee closely monitor the new policy and assist with preparation of strategies for different theme goals -fine tune"
- ☆ Extension of moratorium to 15 mónths post-sampling
- ☆ Encourage shorebased sampling (additional national $-for support of travel to repositories) for high resolution legs
- ☆ Revise drilling proposal format to include initial proposed sampling strategies

JOI Sampling and Curation Workshop

New Policy

Sampling of the Permanent Archive (after 5 years)

- ☆ Requests are reviewed by the Curatorial Advisory Board (2 senior ODP/TAMU staff, 2 JOIDES-appointed scientists)
- ☆ If approved, archive is sampled 6 months after notification to the science community

Educational

- ☆ Requests are approved if the working core are available and if the request does not deplete the working core

ODP SAMPLE DISTRIBUTION POLICY

1. Introduction

The international Ocean Drilling Program (ODP) collects and analyzes marine cores from the global ocean. These cores, as well as those from the Deep Sea Drilling Project (DSDP), are stored in four repositories located in the United States and Germany. This document outlines the policy and the procedures for distributing ODP and DSDP core samples to scientists, curators, and educators.

2. General Provisions

Samples are generally distributed to people in the following four catagories: (1) scientists that participate on specific ODP expeditions (or legs) as shipboard or shorebased members of the "scientific party"; (2) other scientists, namely those not necessarily associated with an ODP or DSDP leg; (3) curators of Micropaleontological Reference Centers; and (4) educators.

Given the expedition-based nature of the ODP, and the desire for flexibility in sample distribution, the policy presented below is divided into two parts. The first section pertains to the "scientific party" participating on an individual leg. The second part pertains to scientists not associated with a particular leg and to educators. Sample requests from the scientific party are submitted to the ODP Curator in the time interval spanning from three months before the cruise begins to 15 months after it ends. This interval is referred to as the "Moratorium". Sample requests from those outside of the scientific party will not be considered until the moratorium has expired. This approach is designed to help the scientific party members meet their obligations to the ODP.

The objectives of this policy are to (1) insure availablity of samples to the "scientific party" so they can fulfill the scientific objectives of the drilling leg and their obligations to the ODP; (2) encourage scientific analysis over a wide range of research disciplines by providing samples to the earth science community; and (3) preserve and conserve an appropriate amount of core material as an archive for non-destructive measurements, additional description and observations of the core material, or, if necessary, for future sampling. The intention of this policy for both leg-specific and post moratorium sampling is to provide samples to investigators for research efforts of a duration of 2 to 3 years.

Reponsibility for sampling policy decisions lie with the Sample Allocation Committee (SAC) and the Curatiorial Advisory Board (CAB). The SAC is responsible for leg-specific sampling decisions. SAC members include the co-chief scientists, the ODP Staff Scientist, and the ODP Curator/curatorial representative. The CAB consists of four members, the ODP Deputy Director of Science Services, the Manager of Science Services, and two JOIDES-selected members of the scientific community who serve for a rotating period of 4 years. Every effort will be made to insure a CAB membership that represents a wide variety of scientific disciplines. The CAB is responsible for decisions on any sample requests where there is a conflict between the curator and /or the SAC and the investigator. The CAB is also responsible for decisions on all sampling of the permanent archive. For all decisions, the CAB will meet using teleconferencing or email so that decisions are made promptly. Final responsibility for any sampling decision made by the CAB rests with the ODP Deputy Director of Science Services.

3. Moratorium Sampling

3.1 Leg-Specific Sampling Strategy

Shipboard and ODP leg-specific sampling are planned using a Sampling Strategy developed by the SAC. Scientists submitting proposals for ODP drilling are encouraged to begin development of a Sampling Strategy at the proposal writing stage. In this way, the drilling, sampling, and downhole measurement programs can be planned together to best meet the science objectives of the Leg. Shipboard and immediate post-cruise sampling should be carefully considered in the strategy. Wherever possible, sampling should be deferred to an immediate shore based sampling effort so that the best possible distribution of samples for science is achieved.

Prior to completion and publication of the Leg Prospectus, the co-chief scientists, the curatorial representative, and the assigned staff scientist (hereafter referred to as the Sample Allocation Committee; SAC) develop a Sampling Strategy that is specific to meeting the science objectives of the leg. The Sampling Strategy will form the basis for the shipboard and moratorium "sampling plan". Before the Sampling Strategy is finalized and published in the Leg Prospectus, it will be reviewed by the ODP Manager of Science Services and the ODP Curator to provide guidance on potential sampling needs of the broader (non-Leg-specific) science community. The Sampling Strategy should address the following:

- how much material will be available for shipboard and shorebased sampling
- how the core will be stored until sampling occurs
- critical interval definition and the plan to deal with critical intervals
- special sampling methods (e.g. Pressure Core Sampler, microbiology)
- estimated sampling frequency by discipline
- routine shipboard sampling
- identification of disciplines/personnel needed for shorebased sampling
- maximum number of samples that can be taken by any investigator

It is recognized that the Sampling Strategy may be adjusted by SAC as leg preparations, and the leg itself, proceed, but the development of a Sampling Strategy at this early stage is critical. Guidelines for writing the leg-specific Sampling Strategy and example guidelines are provided in Appendix A.

3.2 Leg participant sample request

The shipboard and shorebased scientists involved in the leg submit sample requests to the ODP curator no later than 3 months prior to the start of the leg. The sample request will be reviewed by the Sample Allocation Committee and approval will be based on compatibility with the Sampling Strategy. In cases where the sample request is incompatible with the leg Sampling Strategy, the SAC may recommend modifications to the request or, if appropriate, the SAC may modify the Sampling Stategy to accommodate the request. Additional requests submitted at sea will be reviewed by the SAC based on the Sampling Strategy. Acceptance of a sample request (whether pre-cruise or at sea) is contingent upon majority approval by the SAC. In the event of a 50-50 split, a decision is made by the Curator on shore. An appeal may be made by the investigator to the Curatorial Advisory Board (see below), if necessary.

Shipboard scientists have priority over shorebased investigators in the allocation of samples. A shorebased sample request can be accepted if the SAC determines it is appropriate and not in conflict with the shipboard science objectives.

A sample request form is included in Appendix B, and Appendix C contains guidelines to assist the investigator in estimating sample volumes.

3.3 Responsibilities

Scientists who receive samples within the 15-month Moratorium period must:

(1) Submit a scientific research paper within 28 months post cruise (as per the publication policy)

(2) Acknowledge ODP in all publications based upon samples that were supplied through the assistance of the international Ocean Drilling Program.

(3) Submit five (5) copies of reprints of all published works to the Curator, Ocean Drilling Program, 1000 Discovery Drive, College Station, TX 77845-9547, U.S.A. These reprints will be distributed to the repositories and to the ship. All reprints received will be entered into an on-line bibliographic database.

(4) Submit all final analytical data obtained from the samples to the Data Librarian, Ocean Drilling Program, 1000 Discovery Drive, College Station, TX 77845-9547, U.S.A., as soon as they have been published or within 5 years post cruise, whichever comes first. Please call the Data Librarian (409-845-2673) for information on acceptable data formats. Investigators should be aware that they may have other data obligations under the U.S. National Science Foundation's Ocean Science Data Policy or under relevant policies of other funding agencies that require submission of data to national data centers.

(5) Return all unused and unprocessed samples no later than 5 years post cruise. Paleontological materials may be returned either to the curator at ODP or to one of the designated Micropaleontological Reference Centers.

(6) Comply with all written collaborative agreements as identified in the leg sampling plan.

Failure to meet these obligations will result in rejection of future sample requests and may influence participation in future legs.

4. Post Moratorium Sampling

Post-Moratorium sampling is guided by the ODP Curator and the Curatorial Advisory Board (CAB). After 15 months post-cruise, recovered core material is available for sampling to the broader science community. Samples are provided to any scientist who has the resources to complete the investigation. All requests will be evaluated by the ODP Curator based on the availability of material from the intervals requested and the length of time it will take the investigator to complete the proposed analyses. Typical analysis times are two to three years. In cases where the investigator requires more time, an explanation of the need should be included with sample request. If there is any disagreement between the ODP Curator and the investigator concerning the request, it will be forwarded to the CAB for a decision.

A sample request form is included in Appendix B and Appendix C contains guidelines to assist the investigator in estimating sample volumes.

4.1 Responsibilities

Scientists who receive samples after the 15-month Moratorium period must:

(1) File a progress report of sample status 36 months after receiving samples.

(2) Acknowledge ODP in all publications based upon the samples that were supplied through the assistance of the international Ocean Drilling Program.

3) Submit five (5) copies of reprints of all published works to the Curator, Ocean Drilling Program, 1000 Discovery Drive, College Station, TX 77845-9547, U.S.A. These reprints will be distributed to the repositories and to the ship. All reprints received will be entered into an on-line bibliographic database.

(4) Submit all final analytical data and/or descriptive data obtained from the samples to the Data Librarian, Ocean Drilling Program, 1000 Discovery Drive, College Station, TX 77845-9547, U.S.A., as soon as they have been published or within 5 years post receipt of publishing, whichever comes first. Please call the Data Librarian (409-845-2673) for information on acceptable data formats. Investigators should be aware that they may have other data obligations under the U.S. National Science Foundation's Ocean Science Data Policy or under relevant policies of other funding agencies that require submission of data to national data centers.

(5) Return all unused and unprocessed samples no later than 5 years post cruise. Paleontological materials may be returned either to the curator at ODP or to one of the designated Micropaleontological Reference Centers.

Failure to meet these responsibilities will result in rejection of future sample requests and may affect participation on upcoming legs.

4.2 Curator

When a sample request is received during the post-moratorium period, the curator will first assess if material is available in the working core over the requested interval(s). If the interval(s) requested are not available, the curator will consult with the investigator to determine if the requested interval(s) may be modified. If the request cannot be modified because of the science requirements, a request to sample the permanent archive should be submitted (see 4.4 Archive Sampling).

The curator will provide to the scientist information available at ODP regarding previous studies that have been completed on the requested interval. If the investigator needs assistance with determining appropriate sample volumes for a specific analysis, the curator will provide suggestions.

If an investigator disagrees with the Curator's decision on any aspect of the sample request, the Curator must forward the request directly to the CAB.

4.3 Archive Sampling

Sampling of the permanent archive is possible five years post-cruise when the working core for a requested interval is depleted. The CAB will carefully evaluate the request based on the scientific merit of the proposed study and the extent of depletion of the archive. If approved, the Curator will notify the scientific community that the permanent archive for specified intervals will be sampled six months from the time of approval. Scientists interested in this interval will thus have six months to conduct non-destructive studies. The CAB will strive to maintain a representative continuous section of core material wherever possible.

4.4 Educational Sampling

Samples are available from the working core for teaching and educational purposes. Typically, samples from core materials that are abundant in the collection and, thus, not in demand for research purposes are available to educators. Sample requests are approved by the Curator if the request does not deplete the working core over the requested interval. A sample request form for educational purposes is shown in Appendix D.

APPENDIX A

GUIDELINES FOR WRITING LEG-SPECIFIC SAMPLING STRATEGIES

The Sampling Strategy is an integral part of an ODP drilling leg. At the proposal stage, proponents should begin to develop their strategies for meeting science objectives. This guideline can be used to assist in proposal preparation, but its primary function is for writing the leg-specific Sampling Strategy that will meet the objectives set out in the prospectus. The Sampling Strategy will be included in the Scientific Prospectus to assist science participants in the preparation of their specific sample requests. Examples of leg-specific Sampling Strategies are shown at the end of this appendix.

1. Terminology and definitions

Unique holes

A cored interval is deemed unique if there is only one copy of the cored interval (e.g., a single sediment hole). Every igneous basement hole is considered unique because of the lateral lithologic heterogeneity found at most sites. Half of the core from each hole is designated as working and the other half as permanent archive. The minimum amount of permanent material for a unique interval is thus one half of the core from all holes excluding whole-round (e.g., interstitial water samples) intervals.

Non-unique holes

All other cored intervals are deemed non-unique. Each half of a core from a site may be designated working, archive, or permanent archive. One half of a core from each hole is designated as the working half. The permanent archive for a non-unique hole is half of a core over the entire cored interval at each site. All other non-working half core splits are termed archive halves. Thus the minimum amount of permanent archive material for a non-unique interval is half of the core from the deepest cored hole per site excluding the whole rounds. It is understood that the permanent will not include the whole round intervals.

Sampling strategies should strive to utilize the working halves of core intervals before the archive halves wherever possible. The Sampling Strategy defines the amount of core that is the permanent archive (which may be more than the minimum outlined above). The permanent archive is the core material intended for science needs that may arise 5 years or more after the drilling is completed. The CAB decides on all sampling of the permanent archive.

Critical intervals are defined as either discrete intervals or gradational changes that are of high scientific interest such that there is extremely high demand for the available material. Examples of critical intervals include: decollements, sediment-basement contacts, igneous contacts, impact/tectites horizons, gas hydrates, marker ash horizons, and scaly fabric, etc.

2. Sampling Strategy

The Strategy should be written to try to accomodate all of the anticipated science sampling of the leg. The only restriction to the strategy is the reservation of the minimum permanent archive.

The Strategy must include decisions and definitions of the following:

(1) Definition of the amount of core available for all sampling.

(2) The volume and estimated intervals of any routine shipboard sampling.

(3) The estimated sampling frequency required to meet the objectives of the leg, subdivided by discipline and request type.

(4) Definition of potential critical intervals and the protocol that will be followed for sampling recovered critical intervals.

(5) A decision on where and when sampling will occur. The SAC are encouraged to defer large volume and high-frequency sampling to a shore-based facility.

(6) If some or all of the sampling is deferred to the shorebased core repository, then the additional sampling strategy should indicate core storage needs (e.g., plastic wrap, freezing sections, etc.).

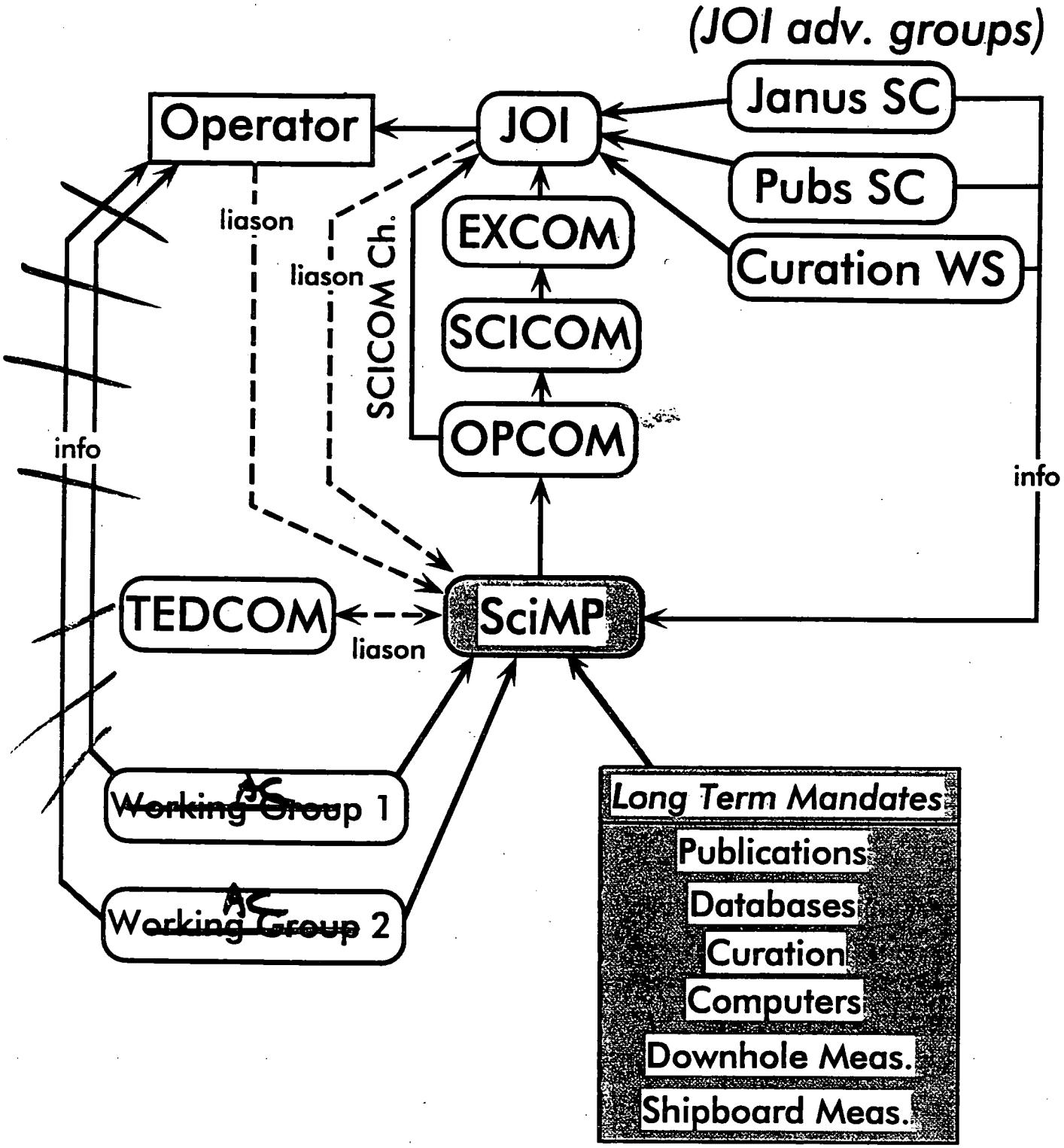
Item H (2) Co-Chiefs Review

- **JOI hosted an ODP Co-Chief Scientist Review on November 20-22, 1996 in Washington, D.C.**
  - **this gave Co-Chiefs from recently legs (160 to 169) an opportunity to discuss their ODP experiences with personnel from JOI, ODP-TAMU, LDEO-WLS and the Site Survey Data Bank.**

Principal Outcomes:

- **Shipboard staffing issues - more flexibility in nominations from non-US partners will be requested**
- **Public affairs issues - Guidelines on preparation and handling of press releases to be prepared. Need for improved communications between ship and shore**
- **Leg planning issues - PCOM will be asked to be more aware of "proposal optimism" and leg combining (generally craming too much into a single leg) as obstacles to achieving science goals. Drilling and logging time estimates will be updated and married**
- **US Co-chief issues - JOI/USSSP will increase salary flexibility, including some admin. support pre-cruise**
- **Site survey issues - JOIDES Office will alert national ODP offices about emerging site survey needs**
- **Shipboard scientist job titles - ODP-TAMU will re-define job descriptions according to leg specific needs**
- **Program awareness - JOIDES Office to advertise next year's science plan in EOS to encourage more applicants**
- **Shipboard labs - ODP-TAMU to form "working groups" for each lab, consisting of a staff scientist, marine tech. and up to 5 shipboard scientist users from recent legs**
  - **this should be the best way to bring lab equipment issues to SciCom/OpCom attention for budgeting**
  - **each lab needs a "mission statement" to ensure best use of all resources**
  - ***item for PCOM discussion vis-a-vis SciMP mandate***
- **Vertical seismic profiling - LDEO-WLS needs to inform SciCom of the wide-ranging utility of VSP's**
- **Shipboard photography - Need to go digital at first technical opportunity**

SciMP Reporting



Proposal Review Procedures

Proposal Submittal Process

Proposals may be submitted as letters of intent, preliminary proposals, or proposals for review at the discretion of proponents. Letters of intent and preliminary proposals will be subject to comments by PPGs and SSEPs. SSEPs will apprise SCICOM the status of these proposals and the substance of comments returned to the proponents.

Proposals for review must meet the following technical requirements:

- site-survey readiness of 2B or better
- goals that are achievable during Phase III with JR capability
- proposal must include a discussion of
  - scientific objectives
  - justification that drilling is the best way to achieve the objectives
  - pertinence to LRP, or why the drilling moves beyond the LRP
  - relation of drilling targets to pertinent site-survey information
  - survey information still needed and plans to acquire
  - complete site summary sheets
  - drilling programs and estimates of drilling time
  - logging and downhole measurements keyed to scientific objectives plus estimates of time required
  - logistical requirements (e.g., weather, alternate platforms, support vessels, etc.)
  - relationship to other global science programs
  - data and intellectual products to be achieved, and what studies will remain at completion

All proposals for review, regardless of review criticims, will be forwarded to SCICOM immediately upon receipt of reviews, together with all reviews, SSEP comments on reviews, and correspondance between SSEPs, PPGs, and the proponents.

Selection of Reviewers

We expect the annual number of proposals for review will be approximately the number contained in the annual prospectuses over the last several years (10-13). Building a pool of qualified reviewers will be important, and could begin pro-actively by seeking volunteers through advertizing. The spectrum of reviewers for a given proposal should include

obvious experts able to comment on different aspects of the proposal
respected scientists outside the ocean drilling community able to comment on the general importance of the scientific objectives.
US and non-US scientists.

If the proposal interests both SSEPs, the panel review process will proceed jointly. SSEPs and their chairs will select 7-8 names per proposal from the reviewer pool and elsewhere.. The chair will prioritize this list of reviewers. JOI will handle all review correpondance and recover at least 3 reviews (4 in the case of joint SSEP review). Reviews will be returned to JOI and then sent to SSEPs with reviewer identity revealed only to the SSEP chair. Chairs may inform SSEPs of reviewers' names when deemed necessary. SSEPs will comment both on the proposal and the reviews.

Guidelines for Reviewers

Reviewers should comment on the extent to which the proposed work will lead to new discoveries or fundamental advances in understanding earth history and/or earth processes presented in the LRP. They are encouraged to comment on whether information provided for each of the 11 criteria listed above is satisfactory. Reviewers need not consider whether the proponents are able to carry out the project, but should, if qualified, comment on the general feasibility of carrying out the project through drilling.

OPTION A

Shorten Leg 174B by 10 days, postpone Hammer Drilling

		CapeTown	dep. 15 Dec. '97	
177	So. Ocean Paleoceanography			16/40 days
		Punta Arenas	arr. 9 Feb. '98 dep. 14 Feb. '98	
178	W. Antarctic Peninsula			18/38 days
		Cape Town	arr. 11 Apr. '98 dep. 16 Apr. '98	
179	Transit + NERO + Hammer Drilling			22.5/21.5
		Darwin	arr. 31 May '98 dep. 5 June '98	
180	Woodlark			June/July
		Suva		
181	SW Pacific Gateway			Aug-Sept.
		Hobart		
182	Great Australian Bight			Oct.-Nov.
		Fremantle		
183	Kerguelen or Prydz Bay (60/65 day legs)			Dec.-early Feb. '99

OPTION B

Save 2 days somewhere from 1997 Schedule

		CapeTown	dep. 23 Dec. '97	
177	So. Ocean Paleoceanography			
		Cape Town	arr. 17 Feb. '98 dep. 12Feb. '98	
178	Transit + NERO			22.5/7.5
		Singapore	arr. 24 Mar. '98 dep. 29 Mar. '98	
179	Mariana-Izu			April/May
		Guam		
180	Woodlark			June/July
		Suva		
181	SW Pacific Gateway			Aug-Sept.
		Hobart		
182	Great Australian Bight			Oct.-Nov.
		Fremantle		
183	Kerguelen or Prydz Bay (60/65 day legs)			Dec.-early Feb. '99

Item K (1) Draft Allocations for FY 98

(a) Summary

	FY96	FY97	FY98
TAMU	37 717 503	37 578 636	38 236 000
LDEO	4 810 444	4 953 364	5 192 000
JOI/JOIDES/DB	1 872 053	1 868 000	1 863 000

(b) Draft FY98 Breakdown

	Fixed Costs	A-Base	X-Base
TAMU	21 647 000	13 312 000	3 277 000
LDEO	2 500 000	1 969 000	723 000
JOI/JOIDES/DB	0	1 863 000	0
Total	24 057 000	16 943 000	4 000 000
	TOTAL		45 291 000
	Budget over-run		891 000

Item K (1) Summary Draft FY98 X-base Allocations

No.	Proposal Title	Cost $ FY97	Cost $FY98	Sum $ FY98
1	1999 Drydock Planning	0	105000	105000
2	Core Image Capture System - part 2 (FY98)	110508	50000	155000
3	Visual Core Descrition - JANUS II	150000	450000	605000
4	DCS Development	551000	490000	1095000
5	Pre-JANUS data migration - FY 98 Contin.	300000	298420	1393420
6	Core-Log Image Correlation Software	49250	66922	1460342
7	WWW Publication (less non opt. salary)	100358	63543	1523885
8	Sampling Parties	29400	40800	1564685
9	Core-Log Integration Mods (1) Oracle link	65053	56559	1621244
10	Sthn Ocean Paleoceanography	0	44838	1666082
11	West Antarctic Penn (hardware)	0	25199	1691281
12	West Antarctic Penn (iceboat)	0	708310	2399591
13	Woodlark Basin	0	505531	2905122
14	SW Pacific Gateway	0	47097	2952219
15	Great Australian Bight	0	173371	3125590
16	MicrobiologyFacility/Core Sampling 50%	0	175000	3300590
17	Sthn Ocean Paleoceanography - GHMT	0	39472	3340062
18	West Antarctic Penn - GHMT	0	47872	3387934
19	Woodlark Basin - BHTV	0	13640	3401574
20	Great Australian Bight - WST	0	16931	3418505
21	West Antarctic Penn - WST	0	16931	3435436
22	West Antarctic Penn - LWD	0	331500	3766936
23	SW Pacific Gateway - GHMT	0	46672	3813608
25	Atlas of Borehole Images	0	56479	3870087
24	Woodlark Basin - Azimuthal Res. Imaging	0	30789	3900876
26	XRD Replacement - 50% carry-in to FY99	0	100000	4000876
27	Re-curation	0	104623	4105499
28	Core-Log Integration Modules (2) Seismic	0	25713	4131212
29	Core-Log Integration Modules (3) Wavelet	0	19995	4151207
35	Woodlark Basin - GHMT	0	40672	4191879
31	Somali Basin	0	552845	4744724
32	Somali Basin - GHMT	0	37072	4781796
33	Somali Basin - GLT	0	83019	4864815
34	Somali Basin - VSP	0	34778	4899593
30	Woodlark Basin - VSP	0	34778	4934371
36	Great Australian Bight - GHMT	0	41872	4976243
37	Great Australian Bight - GLT	0	83019	5059262
38	High temperature tool redesign	0	26745	5086007
39	Engineering Test - LWD	0	300000	5386007
40	Resistivity-at-Bit Test	0	17749	5403756
41	Heave Compensator Evaluation	0	24625	5428381

Draft Report of the

"International Workshop on Riser Technology"

held at Yokohama, Japan, on 28-30 October, 1996

Organized by
Japan Marine Science and Technology Center
Ocean Research Institute of the University of Tokyo
Technology and Engineering Development Committee
of Joint Oceanographic Institutions for Deep Earth Sampling

and Sponsored by
Science and Technology Agency of the Japanese Government
Ministry of Education, Science, Sport and Culture of the Japanese Government

Executive Summary

The International Workshop on Riser Technology was held on 28-30 October 1996 in Yokohama Prince Hotel, Yokohama, Japan. This workshop was organized by Japan Marine Science and Technology Center (JAMSTEC), Ocean Research Institute of the University of Tokyo (ORI), and Technology and Engineering Development Committee (TEDCOM) of Joint Oceanographic Institutions for Deep Earth Sampling (JOIDES), and was also supported by Science and Technology Agency (STA), and Ministry of Education, Science, Sports, and Culture (MONBUSHO) of the Japanese government. Twenty-three engineers, twenty-seven scientists and twelve science administrators were participated from Ocean Drilling Program (ODP) member countries and international organizations including those of Japan. The Workshop was also attended by about twenty engineers, scientists and administrators from Japan as observers. All seventeen papers were presented from the scientists and the engineers.

This workshop followed the Executive Committee (EXCOM) motion of January 1996, and was endorsed at March-TEDCOM and April-Planning Committee (PCOM). The following three symposium were held as the predecessors of this workshop: (1) Workshop on Ocean Drilling in the 21st Century (Kyoto Workshop) on February 1994, (2) JOIDES-STA/JAMSTEC Engineering and Technology Working Group on May 1994, and (3) International Conference on Ocean Drilling in the 21st Century (OD21) on February 1996.

The main purpose of this workshop were to evaluate the technology matched with the scientific objectives, and to exchange the discussions with both the scientists and the engineers at the same place in order for both side to understand each other, for new scientific deep sea drilling in the twenty-first century.

The discussing sessions of the workshop were mainly divided into five categories as follows: (1) ODP's LRP (Long Range Plan), (2) OD21 program, (3) Scientific objectives and Expectation on technology (Case study with typical model holes), (4) Drilling/coring technologies, (5) Riser drilling technologies.

In the first and second category, outlines of ODP's LRP and OD21 program were respectively reviewed. In the third category, seven typical model holes for each scientific objectives, which consist of (1) New oceanic crust, (2) Older oceanic crust, (3) Large igneous provinces, (4) Convergent margins, (5) Passive Margins (Deep slope), (6) Deep ocean basin sediment, (7) Back arc basin, were proposed. In the fourth category, the experiences of JOIDES Resolution were reviewed, and the idea of new deep drilling/coring technologies for OD21 were suggested. In the fifth category, as the mud circulation technologies for deep drilling, the 16 in. petroleum type riser system, the slimline riser system, the riserless closed mud circulation system, and the riserless mudlift drilling system were introduced. Finally, in the concluding session to summarize this workshop and to make the recommendation to EXCOM, the features of each seven model holes proposed from scientists were confirmed, and the required technologies to reach each scientific objectives were discussed concretely.

The workshop approved the main features of seven model holes and their minimum required system which is shown in Table 1, and also the recommendation annexed as its conclusion.

Recommendation

JAMSTEC, ORI and JOIDES/TEDCOM, with the support of STA and MONBUSHO, jointly organized the International Workshop on Riser Technology, Yokohama, Japan, 28-30 October 1996. The Workshop explored possible technology development in support of a new era of deep sea drilling in the 21st century and exchanged views on the mode of operation of such a program. The Workshop, attended by geoscientists and engineers from various specific fields, discussed the most desirable strategic approach to reveal the new era of the deep sea drilling research on the basis of geo-scientific requirements. The Workshop studied comprehensively the scientific requirements and adaptable drilling technologies of seven model holes endorsed by the JOIDES Planning Committee, taking into account different structural setting of ocean bottom as summarized in the attached tables. It also discussed features and applicable limitations of the newly proposed concepts for mud circulation and other related technologies.

Phase A

1. The Workshop fully supported the concept that there should be close linkages between science planning beyond 2003 and the specifications of the new OD21 drilling vessel and its drilling systems. With this in mind, the Workshop participants look forward to the outcome of the conference on Coordinated Riser Drilling scheduled for July 1997. The Workshop recognized, after reviewing the scientific objectives and drilling technologies, that the OD21 program proposed by JAMSTEC will focus on scientific objectives beyond the current technological capabilities of the JOIDES Resolution, and the proposed vessel will be complementary to those capabilities. OD21 will be indispensable for further research on, and development in the earth sciences, including studies of global environmental changes, earthquakes, and deep crustal structure and upper mantle composition, that require deep drilling and well control.

2. The Workshop recognizes that the plan of a drilling vessel with a 2,500 m/16 in. petroleum type riser system is feasible, and represents an extension of the currently available technologies. It also plays an important role as a preparatory step for the development of still deeper water drilling technologies. It urges EXCOM to support and encourage the development of this plan. The Workshop also urges JAMSTEC to extend the operational water depth of this system to 3,000 m, in order to advance the available technology and to open the range of geotectonic environments that can be drilled during the early phase of OD21.

3. The Workshop recommends STA/JAMSTEC to report periodically the progress of their studies on a drilling vessel with the 2,500 m/3,000 m/16 in. petroleum type riser system to the JOIDES Advisory Structure.

4. The Workshop recommends to appropriate Japanese Authorities that they consider urgent action to materialize a drilling vessel with the 2,500 m/3,000 m/16 in. petroleum type riser system by the end of the ODP Phase III. The Workshop encourages JAMSTEC and all current ODP partners to work closely together to ensure progress in the development of technology necessary to achieve the scientific goals of the ODP Long Range Plan.

Phase B

5. The Workshop reaffirms that the strategy of JAMSTEC to develop a 4,000 m mud circulation capability is important in meeting objectives of the ODP Long Range Plan. Experience in operating a 2,500 m/3,000 m class riser will be relevant to the implementation of such deeper waters drilling strategies.

6. The Workshop recognizes that the extension of the 2,500 m/3,000 m class riser to a 4,000 m class petroleum type riser is likely to be a feasible option. However, it recommends that JAMSTEC, with input from JOIDES and the wider ocean drilling community, should evaluate the range of applicable technologies, including newly proposed technologies such as slimline risers, and the riserless mud circulation system, when addressing deeper water drilling system development.

7. The Workshop recommends that JOIDES provide appropriate scientific and technological advice to JAMSTEC to assist its challenging technological development involving the implementation of deep water and deep penetration drilling which is the goal of OD21. It recommends further that JAMSTEC reports its progress and development periodically to the JOIDES Advisory Structure.

***: Abbreviations**

EXCOM: Executive Committee of JOIDES
JAMSTEC: Japan Marine Science and Technology Center
JOIDES: Joint Oceanographic Institutions for Deep Earth Sampling
MONBUSHO: Ministry of Education, Science, Sports and Culture of Japan
ODP: Ocean Drilling Program
ORI: Ocean Research Institute, University of Tokyo
PCOM: Planning Committee of JOIDES
STA: Science and Technology Agency of Japan
TEDCOM: Technology and Engineering Development Committee of JOIDES