

JOIDES OPERATIONS COMMITTEE
29 August, 2001

**Hosted by Oregon State University and JOI at
Embassy Suites Hotel, Portland, Oregon**

OPCOM Members:

Keir Becker (Chair)	RSMAS, University of Miami, USA
Kevin Brown	Scripps Institution of Oceanography, University of California at San Diego, USA
W.W. Hay	GEOMAR Research Center, University of Kiel, Germany
Nick Piasias	College of Oceanic & Atmospheric Sciences, Oregon State University, USA
Alastair Robertson	Department of Geology and Geophysics, University of Edinburgh, UK
Thomas Shipley	Institute for Geophysics, University of Texas at Austin, USA

Liaisons, Guests, and Observers:

Jack Baldauf	Science Operator (ODP-TAMU)
George Claypool	US Geological Survey (PPSP Chair)
J. Paul Dauphin	National Science Foundation
John Diebold	Lamont-Doherty Earth Observatory (SSP Chair)
John Farrell	Joint Oceanographic Institutions, Inc.
P. Jeff Fox	Science Operator (ODP-TAMU)
Dave Goldberg	Wireline Logging Services (ODP-LDEO)
Eiichi Kikawa	JAMSTEC, Washington DC (SCIMP Co-Chair)
Bruce Malfait	National Science Foundation
Mary Reagan	Wireline Logging Services (ODP-LDEO)
Alister Skinner	British Geological Survey, Edinburgh, United Kingdom (TEDCOM Chair)
Dan Weill	Joint Oceanographic Institutions, Inc.

JOIDES Office:

Aleksandra Janik	JOIDES Office, Science Coordinator
Elsbeth Urquhart	JOIDES Office, International Liaison

Agenda

- A. Approval of agenda
- B. Operator updates/issues affecting scheduling
 1. Leg 203 (Costa Rica) planning
 2. Priorities for engineering time on JOIDES Resolution
 3. Planning for JOIDES Resolution demobilization
- C. Develop alternative drilling schedules
- D. Consider service panel recommendations
- E. Other business

Minutes

A. Approval of agenda

Becker welcomed the OPCOM attendees and then announced the addition of the two items to the agenda. First item is the approval of the March 2000 OPCOM minutes and the other is the addition of APL 19 and Leg 200 discussion to agenda item B.

OPCOM Consensus 01-02-01: OPCOM approves agenda of this meeting
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OPCOM Consensus 01-02-02: OPCOM approves the minutes from the March 30, 2001 meeting.
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B. Operator updates/issues affecting scheduling

1. Leg 203 (Costa Rica) planning

Baldauf reported that the main outstanding operational issue is the planning for the Costa Rica drilling (Leg 203). In order to better implement the leg, ODP/TAMU suggested swapping of the Legs 203 and 205 to gain more time for engineering planning of the Costa Rica drilling operations. Items still under discussion include the details of hole design and number of packers, the size of the annular volume for geochemical sampling, and review of geochemical tubing. He said that there will be a meeting during the first week of September to discuss scientific priorities and the hole design to clarify these outstanding issues. Baldauf continued with presentation of the revised operational schedule with the Costa Rica and Equatorial Pacific ION leg switch also affecting the timing of Leg 204 - Gas Hydrates.

Original ODP Operations Schedule

203	Costa Rica	31 May – 30 July
204	Gas Hydrates	30 July – 27 September
205	Eq. Pacific Ion	27 September - 2 November

Revised ODP Operations Schedule

203	Eq. Pacific Ion	31 May – 7 July
204	Gas Hydrates	7 July – 5 September
205	Costa Rica	5 September - 4 November

Baldauf added that the interested parties have preliminarily agreed to this possible change. Becker, who participated on Leg 196, noted that it was clear during the Nankai A-CORK installation that the engineers needed more time to prepare for the Costa Rica leg, so the proposed change in the drilling schedule would allow for that preparation. Malfait asked if this proposed ODP schedule change would interfere with the VSP (Vertical Seismic Profile) experiment on R/V Ewing that was planned in conjunction with Leg 204 - Gas Hydrates. Diebold, who is the Marine Science Coordinator for R/V Ewing, said that most probably in this particular case the problem can be worked out because he has some scheduling flexibility, so the VSP experiment should not be lost.

Hay mentioned a German cruise also planned in conjunction with Leg 204 on R/V Sonne. He noted that the ODP schedule change will probably interfere with this plans, but he noted that the coordination for this project was done on the co-chiefs' level but not through any official ODP procedure for cooperative cruises. Hay added that, had the latter been the case, we would now face a serious issue. Further discussion followed about planning of cooperative cruises.

Pisias asked for more specifics about the causes of the delay in preparation for the Costa Rica leg. Baldauf explained that the CORK engineers were involved in participation in Leg 196, so they could not fully focus on preparation for Costa Rica until after Leg 196. Fox added that a lot of new engineering information was gathered during Leg 196, showing that the Costa Rica installation must be redesigned and improved. Baldauf emphasized that ODP Operators would face a difficult situation if they were to attempt to deliver the Costa Rica leg in its present schedule.

OPCOM Consensus 01-02-03: OPCOM approves the switch of the Costa Rica and Equatorial Pacific ION legs, with Costa Rica to become Leg 205 and Equatorial Pacific ION to become Leg 203.

Pisias and Shipley added that OPCOM members should be informed of possible operational changes like leg swapping further in advance of meetings. Everybody concurred and there was a general agreement that, if such issues come up in the future, OPCOM members should be fully informed by email at the earlier stages.

2. Priorities for engineering time on JOIDES Resolution

Baldauf reported that HRRS/ADCB have not been deployed in the environments they were tested for, but they are very close to operational status, so it is an engineering priority to use them again in the targeted design lithologies in order to push them over from the development to operational status. He summarized the potential areas where HRRS/ADCB tools could be tested before the end of ODP (Core Complex-MAR, MAR-Peridotite, EPR, TAG II) and provided details of the test plan and cost estimate. For stand-alone testing, the total time on site would be 17.2 days with the total cost of the engineering test plan of \$304K. If this operation could be combined with any of the highly ranked hard rock legs (MAR), then it would take about 14 days. Becker asked if such testing should be done before or during the targeted MAR leg. Baldauf said that preferably such testing could be done before the standard leg operations start, so that if successful, HRRS/ADCB could be used to accomplish the MAR leg objectives and if not, than RCB would be used for the remainder of the leg. Some further discussion was followed by Skinner's comment that HRRS/ADCB actually is in good shape, so there is not much risk associated with the deployment during the targeted leg.

3. Planning for JOIDES Resolution demobilization

Baldauf presented the details and the assumptions of the demobilization efforts planned for the end of the JR operations. He presented two options, one with 22 days of demobilization and the other with 7 days. In order to maximize the JR use for obtaining the scientific objectives, the 7-day scenario is preferred. In that scenario, demobilization will commence on the 22nd of September 2003 in a Gulf Coast port (targeting Galveston), the activities will be on 24 hours/day basis, and the contract will ODL will end September 30th, 2003. Equipment and supplies will be packed and

shipped to TAMU, and permanently mounted items (lab stack, doors, etc.) will remain on the ship for various reasons, for example to avoid extra cost related to the removal.

Brown asked who owns the permanently mounted items and Malfait answered that some assets belong to the government and the ownership of others has been transferred to TAMU.

Pisias wondered about the possibility of a delay in demobilization to have some drilling time available to use the money offered by Canadian oil companies to supplement the cost of drilling at the Scotian Margin. Malfait clarified it could not be done within the present contract.

Fox said that ODP-TAMU are in the midst of discussion with ODL about the options for use of JR, after the contract ends, e.g. for geotechnical work, with possibility of TAMU staff involvement. He noted that the Canadian letter will be forwarded to ODL to investigate the opportunity. Hay noted that \$3M dollars is not enough to drill a hole, and Pisias added that this proposed contribution could be helpful only if used with conjunction with the regular leg.

C. Develop alternative drilling schedules

Becker begin the scheduling discussion by presenting the list of 13 highly ranked proposals that were forwarded by SCICOM to OPCOM for scheduling in FY03:

August 2001 SCICOM Global Rankings Forwarded to OPCOM					
Rank	Proposal		Mean	Std.Dev.	
1	533	Arctic Ocean	2.53	2.80	MSP
2	525	MAR Peridotite	3.60	2.56	
3	559	Walvis Ridge	6.60	3.31	
4	522	Fast Spread Crust	7.53	5.82	
5	577	Demerara Rise	9.33	5.56	
6	519	S. Pac. Sea-Level	9.93	3.97	MSP
7	557	Storegga Slide	10.47	5.12	
8	564	New Jersey Shelf	10.93	4.88	MSP
8	594	Newf. Margin	10.93	6.43	
10	548	Chicxulub	11.00	5.21	MSP
11	575	G. of Aden	11.27	5.88	
12	539	Blake Hydrates	11.40	4.56	
13	455	Laurentide Ice Sheet	11.53	6.19	

MSP – Mission Specific Platform

Noting the statistical strength of the highest ratings, Becker and Pisias said that they would envision the list of scheduled JOIDES Resolution legs as perhaps including the 4 highest ranked non-MSP proposals plus a fifth proposal from the statistically less distinguishable group ranked below the top 4.

Baldauf explained to the panel that ODP-TAMU had prepared a set of operational models containing combinations of the highest ranked non-MSP proposals, as follows:

Model 1

Fast-Spread Ocean Crust (522)
Demerara Rise (577)
MAR Peridotites (525)
Blake Hydrates (539)
Walvis Ridge (559)

Model 2

Fast-Spread Ocean Crust (522)
Demerara Rise (577)
MAR Peridotites (525)
Storegga Slide (557)
Newfoundland Margin (594)

Model 3

Fast-Spread Ocean Crust (522)
Demerara Rise (577)
Walvis Ridge (559)
MAR Peridotites (525)
Storegga Slide (557)

Reagan asked about the impact on the proposed schedules if Legs 203 and 205 are switched and Baldauf responded that it is about 2 days, which is not very significant.

Hay reminded OPCOM of the SCICOM motion that the ship must return to Atlantic in 2002:

SCICOM Motion 99-2-23: SCICOM resolves that the JOIDES Resolution will operate in the Atlantic during at least part of 2002.

OPCOM engaged in discussion of the three models prepared by ODP-TAMU, with emphasis put on the following factors: the length of transit, the length of available drilling time versus the length of time requested by proponents to fully achieve the scientific objectives, details of what could be cut out of the planned science if less days are available for drilling, cost estimates of the special operating items, and any weather constraints.

After this discussion, Becker reiterated that the 4 top-ranked non-MSP proposals are statistically much stronger than the rest. He suggested that those 4 programs should definitely be included in the drilling schedule and the question is how to choose the 5th one from the remaining group of statistically closely ranked proposals. Brown recommended that perhaps the transit time should be minimized, and Becker suggested that SCICOM could be asked for revote on the group below the top 4.

Shipley said that OPCOM should prepare several scenarios for SCICOM to choose, and he asked Baldauf to explain the differences in transit times among the three models above. The total transit differences among these models are only about 5 days, but there would be penalties to on-site time if both Walvis Ridge and Storegga Slide were scheduled.

Pisias emphasized that scheduling of the highest ranked proposals will be exactly what SCICOM asked for, which is choosing the best science. Becker suggested that honoring the SCICOM ranking would probably require that, if there any cuts in on-site time are necessary, those cuts should be applied to the 5th program below the top-ranked group. He also said that the amount of science of the 5th leg that can really be done after these time constraints must be factored into the drilling scenarios prepared for SCICOM to choose from. Malfait was also concerned about any possible shortening of the 5th program and impact it would have on achieving of the scientific objectives.

OPCOM Consensus 01-02-04: OPCOM will forward to SCICOM for their final choice 4 possible schedules, each of which will include drilling the 4 top ranked proposals:

- 525 – MAR Peridotite
- 559 – Walvis Ridge
- 522 – Fast Spreading
- 577 – Demerara Rise

plus 1 of the other 4 North Atlantic programs forwarded to OPCOM:

- 577 – Storrega Hydrates or
- 594 – Newfoundland Margin or
- 539 – Blake Hydrates or
- 455 – Laurentide Ice Sheet.

Becker and Baldauf were to meet immediately following OPCOM to work out the different permutations including 4 top ranked proposals plus one, showing the consequences that the shortening of the 5th program would have on the science. As the result of those deliberations the following 4 options were prepared for presentation the next day to SCICOM:

Option #1 with Storegga Slide Hydrates shortened leg

- Leg 205 Costa Rica
 - Leg 206 Fast-Spread Ocean Crust (522)
 - Leg 207 Demerara Rise (577)
 - Leg 208 Walvis Ridge (559)
 - Leg 209 MAR Peridotites (525)
 - Leg 210 Storrega Slide Hydrates (557)
- Disadvantage: approx 15 days short --> curtailed Storegga program

Option #2 with Newfoundland Margin (5 legs of normal length)

- Leg 205 Costa Rica
- Leg 206 Fast-Spread Ocean Crust (522)
- Leg 207 Demerara Rise (577)
- Leg 208 Walvis Ridge (559)
- Leg 209 MAR Peridotites (525)
- Leg 210 Newfoundland Margin (594)

Option #3 with Blake Hydrates (5 legs of normal length)

- Leg 205 Costa Rica
 - Leg 206 Fast-Spread Ocean Crust (522)
 - Leg 207 Demerara Rise (577)
 - Leg 208 MAR Peridotites (525)
 - Leg 209 Blake Hydrates (539)
 - Leg 210 Walvis Ridge (559)
- (Blake proponents have underestimated time requirements; regular leg is not enough for stated objectives.)

Option #4 with LISO (5 legs of normal length)

- Leg 205 Costa Rica
- Leg 206 Fast-Spread Ocean Crust (522)
- Leg 207 Demarara Rise (577)
- Leg 208 Walvis Ridge (559)
- Leg 209 MAR Peridotites (525)
- Leg 210 Laurentide Ice Sheet Outlets (455)

Discussion of APL 19

OPCOM then considered APL19 (Giant Nu'uuanu Landslide), which would require 1.8 days of operations and was forwarded by SCICOM for possible scheduling in conjunction with Leg 200.

Baldauf presented the operational time estimates for Leg 200 and mentioned that the co-chiefs would like to spend any extra time on extending their primary H2O ION/OSN site as deep as possible into basement. Also, there is a plan for APC coring at the H2O site to complement Leg 199 objectives (or even to move to PAT 13 in the unlikely event that sufficient transit time becomes available). In any case there is almost no time left for any additional work. Becker reviewed the issue of drilling through the possible chert layer during Leg 200 that must be resolved before considering APL 19. After discussion OPCOM reached agreement that the operational program at the H2O site should start with APC coring, and if there is no chert, it should continue with double APC to refusal and XCB to basement. In the latter case, the saved pipe trip time later could be used for deepening of the hole in basement. Piasias noted that the pilot XCB coring should be used first to check for the possibility of chert, and OPCOM agreed.

OPCOM moved on to discussing the possibility of scheduling APL 19, in the context of the tight drilling plan on Leg 200 and the possibility that SCICOM would choose an FY2003 schedule option that would require all available JR time through the end of ODP. Robertson supported the idea to leave scheduled legs as they are now, and to try to find one day in the schedule for APL 19 by leaving port for Leg 200 one day early. In that case, less than one day of already-scheduled Leg 200 time on site would be impacted in conducting the APL 19 program.

<p>OPCOM Consensus 01-02-05: OPCOM agrees to include APL 19 in the drilling schedule if the ship leaves port for Leg 200 one day earlier.</p>
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FY2003 Logging Plans

Reagan presented the logging plans for the top ranked proposals that could be scheduled for drilling in FY03. In addition to standard logging on all programs, GHMT and high-resolution natural gamma tools would be needed for the paleoceanographic proposals, and VSP and LWD would be needed for hydrates proposals. The only potentially difficult item might be associated with the very highly ranked proposal 525 – MAR peridotite. That would be the leasing cost for the LWD resistivity-at-bit (RAB) tool, which would be needed for the entire cruise because of distance to port. In the past LWD tools have been delivered to the ship by small boats to minimize the leasing time, but it is not possible to transport them all the way to the mid-Atlantic ridge location.

Brown wondered about the importance of the RAB tool and Reagan explained that it is very important for achieving key structural objectives through imaging of the holes. She added that RAB was successfully used in the past in Manus Basin and Nankai Trough environment. Piasias stated that not deploying LWD could jeopardize the science of the MAR leg.

Baldauf wondered if and how OPCOM is going to come back to the financial issues after SCICOM decides on the drilling schedule. He was unsure how OPCOM could review the costs of what SCICOM might decide to schedule on the following day, i.e., how OPCOM would fulfill its mandate to advise on financial implications. Becker mentioned the Managers Meeting in early

October, and suggested that if any outstanding financial problems arise as of that meeting OPCOM would then be notified for advice.

Shipleigh said that perhaps OPCOM should not forward to SCICOM anything that the Operators would not be able to deliver. On the other hand, Piasias asked if these logging costs are really that much higher than in the last two years. Becker suggested that the contrary was likely to be the case – that overall SOE's for FY2003 were likely to be less than for FY2001 or FY2002, so that the scheduling options would hopefully not pose any insurmountable financial problems.

D. Consider service panel recommendations

Kikawa briefly reviewed the recent SCIMP recommendations that had already been discussed earlier and endorsed during the SCICOM session.

SCIMP Recommendation 01-1-6

The SCIMP core-log-seismic integration report documented the need for routine acquisition of check shot data. SCIMP therefore enthusiastically endorses the LDEO proposal to test a triple combo tool string with check shot capability that allows such routine acquisition with minimal cost of time.

Reagan said that LDEO anticipated testing the check shot triple combo tool on Leg 200 (H2O), where check shot results would be of great scientific interest.

SCIMP Recommendation 01-1-7

In response to questions about archiving supplementary shipboard data in Microsoft Excel files, SCIMP endorses the policy that leg scientific parties decide which supplementary data tables are to be archived. These scientific parties will be responsible for converting the data to ASCII format, and will also be responsible for proofing these data at the IR post-cruise meeting.

This is mainly about the format recommendation. Rack clarified that if the scientific party will want to include any extra data in the Scientific Volume CD they will have to provide them in the right format for the publications.

SCIMP Recommendation 01-1-9

SCIMP endorses the concept of using ^3H , ^{14}C , and ^{35}S for microbiology in an isolation van on the JOIDES Resolution. While noting that significant progress has been made towards this, Panel requires that the following issues be addressed prior to implementation.

- a) Require scientists to submit to ODP/TAMU detailed experimental protocols specific for use on the JOIDES Resolution and proof of certification from their home institution for radioisotope use.
- b) Establish Standard Operating Procedures for all radioisotopes to minimize the potential for contamination by a) requiring users to wear protective clothing while in the isolation van (glasses, coveralls, separate shoes) and b) separate person(s) ("runners") to deliver samples to the isolation van.
- c) Establish policies that ensure that scientists-users assume responsibility for any clean-up costs.

Baldauf added that only properly certified personnel would be involved in using isotopes on the JR and such certification would be required prior to sailing. Referring to logging tools that already use radioactive sources, Reagan wondered about exceeding the total allowable isotope amounts onboard, and Baldauf said that the Operators are working on those issues.

Baldauf clarified that there are more issues than those flagged in the SCIMP recommendation 01-01-9, and on some of them SCIMP can advise but on others like permitting and certifications, TAMU radiation officers will provide some input. The current plan is to implement isotope usage on Leg 201 (Peru Biosphere). Pias mentioned that microbiologists should be aware of the fact that those isotopes may contaminate other measurements on the ship, so the contamination issues should be taken into account. Rack said that appropriate JR-specific protocols are being developed and David Smith, SCIMP member who presented the issues at the most recent SCIMP, will sail on Leg 201.

Pias suggested that SCIMP come back to OPCOM for their next meeting and give some insights about actual developments with the isotope issues to ensure that ODP is proceeding effectively.

OPCOM Consensus 01-02-06: OPCOM recommends to SCICOM approval of SCIMP recommendations 01-1-5, 01-1-6, 01-1-7, and 01-1-9.

Kikawa touched on the next SCIMP meeting that is planned to take place in Hawaii on December 17-19 and the possibility to have a joint meeting with TEDCOM in June 2002. Becker said that he would approve such a joint meeting once officially requested. Reagan wondered if the two panels will always meet together, but it was clarified that this approval will be on a one-time basis.

Finally, Kikawa presented the SCIMP recommendation about the tool developments. Becker reminded OPCOM that this recommendation and the allied TEDCOM recommendation have already been presented to SCICOM, and two SCICOM members are already in the process of preparing a motion in response.

SCIMP Recommendation 01-1-3

SCIMP recommends to SCICOM that appropriate prioritized time (e.g., 1-2 days) be set aside in each leg for tool development. These engineering objectives would have priority that is equal to science objectives. The engineering time would be forfeited in the absence of compelling, mature engineering proposal(s). Where possible, engineering field trials should be tied to science objective of the leg.

Pias enthusiastically supported the idea and said that would be very useful if OPCOM would know what these tools are, so he suggested that a list of the tools ready to be tested be presented to OPCOM at their next meeting in March. Fox said that the SCIMP recommendation endorses the principle of something that was happening in the past but in a less formal way. Baldauf emphasized that would be better if tools identified for priority testing be associated with legs on which the tool test has potential to improve the scientific outcome. Skinner added that the details of each test have to be considered on a case-by-case basis. He added that sometimes less than 2 days are needed, for example, in the case of some preliminary test of PCS only a few hours are needed. Pias said that he was under impression that this recommendation addresses the tool that need more testing time than just hours. Becker wondered if there is really a problem with doing such short tests. Baldauf responded that during last year the co-chiefs scientists were very cooperative and many short tests have been performed.

Goldberg wondered how this recommendation differs from 3rd party tools approval process. Pias explained that right now the tests are done on agreements with co-chiefs, whereas this recommendation mandates that such test be done and gives them necessary priority.

Pisias again emphasized a need to present to OPCOM at their next meeting a list of possible tools that are ready to be tested. Becker wondered how far along the Operators will be on leg planning as of the next OPCOM meeting. Baldauf replied that they would probably not be much further than the Costa Rica leg, so there will still be time to incorporate the tests that would be reviewed at March 2002 OPCOM meeting into the planning for the last year of JOIDES Resolution operations.

Becker said that he will write to SCIMP and TEDCOM chairs to ask for the list of possible test tools to be prepared at their December meetings.

Kikawa wondered about important tests arising at the last moment, and there was a general agreement that there should be enough foresight so that tests can be planned no later than the leg precruise meetings.

HYACINTH Request for Leg 201 Testing

Becker reminded OPCOM that there is already one item that falls into this category – the request from the HYACINTH consortium to test the HYACE percussion and rotary corers during Leg 201. The request comprises less than a day of actual testing time for the two corers, spread out over a week, and apparently will require the presence of two engineers for each tool for a total of 4 berths. The trial must be done in the shallow water sites that will be drilled in the middle of leg 201. Pisias added this microbiological leg could greatly benefit from the use of these tools, if the tests are successful.

Becker reviewed the SCICOM consensus supporting cooperation with the HYACINTH consortium:

SCICOM Consensus 01-02-07: SCICOM recognizes the importance of further development of the HYACE tools and endorses an ODP partnership for this development with the HYACINTH consortium.

He also explained that in this particular case the issue is not time, but the lack of available berths on the ship, so that shipboard scientists or techs would have to be removed from the ship for the time of tests to accommodate the HYACE engineers. He added that if only two berths were available then the test of the percussion corer would probably have priority. The co-chiefs would probably agree to give up 2 sedimentologist because the core description can be done later, but still with the amount of cores coming on deck from this shallow sites, there will be a serious issue for achieving the leg scientific objectives. Skinner wondered if there are only two HYACE engineers, would it still be necessary to pull two people off the ship? Becker confirmed that would be the case – the Operator has explored all other options to free up berths.

Pisias wondered about the possibility to test the HYACE tools on one of the shallow sites of Leg 202 instead. The HYACINTH group was not opposed to exploring the possibility of testing on other legs, but Baldauf said that there would be not enough time to turn the tools around for the Leg 204, where they would be essential for gas hydrates objectives. Brown reminded that Leg 201 would really benefit from any successful use of the HYACE tools and Pisias agreed that the tools would provide more scientific advantage to Leg 201 than Leg 202. Shipley stated that we should test both tools in the nearest future in order to have them in operational status soon.

Becker wondered if perhaps one tool could be tested on Leg 201 and the other on 202, but Fox noted this would double the cost of shuttle-ship transportation of people to the ship. The cost is

about \$30K per occurrence, which HYACINTH has not budgeted. Becker said that during the October meeting with the HYACINTH consortium, cost-sharing could be negotiated as part of the partnership agreement. Rack confirmed that HYACINTH does not have the transportation costs in their current budget as they are thought to be part of the shipboard testing costs that ODP will absorb. However, he noted that there might be other items that could be used during the partnership negotiations, for example, the gas manifold for PCS being developed with DoE funding, which could possibly be used for HYACE tools as well. Brown stated that the concept of sharing the transportation cost should definitely be pursued.

There was a general agreement that for Leg 201 two berths should be guaranteed for the HYACE engineers to do the testing. Skinner promised to follow up with the HYACINTH partners on employing two instead of four people for both tools, perhaps by bringing one engineer per tool with cross-training on the other. He also added that ODP engineers could get involved in the HYACE trials not only to help but also to gain a very useful technical experience.

<p>OPCOM Consensus 01-02-07: OPCOM recommends that two berths be provided during Leg 201 for engineering tests of HYACE tools.</p>

E. Other business

Becker asked for confirmation of liaisons to the next service panel meetings. He said he would attend the PPSP meeting in Miami (3-4 December 2001) and the TEDCOM meeting in Keyworth, UK (6-7 December 2001). Piasias provisionally agreed to attend the SCIMP meeting in Hawaii (17-19 December 2001) [but the next day SCICOM member P. Fryer of Hawaii agreed to attend instead].

Becker added that OPCOM must exist till the end of ODP, so SCICOM will have to appoint two new OPCOM members to replace Robertson and Hay, who are rotating off SCICOM. [On the next day, SCICOM appointed Salisbury (PacRim) and Kenter (ECOD) to serve on OPCOM.] Piasias, Shipley and Brown agreed to continue to serve on the OPCOM panel.

MEETING ADJOURNED AT NOON