

WESTERN PACIFIC REGIONAL PANEL  
11-13 April, 1988  
Hannover, FRG

EXECUTIVE SUMMARY

WPAC reviewed the first year program of Western Pacific drilling (Legs 124-129) in detail. The prospective second year program was also reviewed with the objective of preparing a comprehensive drilling plan for that year at the next meeting (October, 1988).

LEG 124: Banda/Celebes/Sulu/SCS Basins

Only one Banda site (BNDA-2) is approved by SSP and WPAC. Basement is not clearly imaged at BNDA-1, even with new DARWIN data. Without Indonesian clearance, minimum program to meet scientific objectives consists of one site in the Celebes (CEL-1), Sulu (SS-3) and S.China (SCS-5B) Basins which requires a 60 day leg, arriving Manila in early January. To arrive in Manila before Christmas, after a 41 day leg, would jeopardize basement objectives and logging at a second site. A minimum leg is 43 days for two sites, in which case a third site should be drilled on the Engineering Leg 124E. Alternate, but less desirable, sites for SCS-5B exist if current political constraints prevail.

LEG 124E: Engineering Test Leg

Available site survey information has been forwarded to TAMU. Specific sites (on Benham Rise and Mariana Trench) have not been reviewed.

LEG 125: Mariana-Bonin

A 56 day leg is planned to include re-entry site BON-6, and serpentine diapir sites MAR-3A and -3B, with BON-7 as high priority alternate.

LEG 126: Bonin

A 58 day leg is planned to include BON-1, -2 (mini cone, not re-entry), -5A and -5B. The possibility of high temperatures (50-300° C) at BON-1 site requires heat flow transect (GSJ 8/88) to position the site away from possible local high heat flow areas.

LEG 127: Nankai

A 57 day leg is planned to include NKT-1 and NKT-2 (re-entry).

1. Core NKT-2 pilot hole to 400m then "wash" to 1300m and log extensively
2. Core NKT-2 re-entry hole, do VSP and packer experiments
3. Core NKT-1 and log
4. Four to five days of physical properties time (with or without Geoprops tool) is included
5. Vertical seismic profile at both sites is planned. Offset VSP at NKT-2 is recommended pending logistic constraints of scheduling a second ship.

### LEG 128: Japan Sea I

A 56 day leg is planned to include J-1b (re-entry), J-1d, J-1e and J-3b. The structure is simpler at J-3b than J-3a, even though MCS data processing is not yet complete. The major site (J-1d) to study Japan Basin evolution needs relocating based on MCS site survey. Additional MCS site surveys are scheduled for June, 1988.

### LEG 129: Japan Sea II

A 41 day leg is planned to include J-2a, JS-2 and 10 days for downhole seismometer deployment and oblique seismic experiment at J-1b.

### Co-Chiefs for Japan Sea Legs

Additional recommendations for Japan Sea I and II co-chiefs include: Carolyn Isaacs (USGS), Kenneth Pisciotto (San Francisco), Paul Baker (Duke), Hugh Jenkyns (Oxford), Judy McKenzie, Kerry Kelts, Hans Schrader, Gerhardt Einsele, and for JSII only: Steve Calvert (UBC) and Alastair Robertson (Edinburgh).

### Geochemical Reference Sites

LITHP proposes one leg to drill MAR-4, -5 and -6; the oceanic crust, a seamount summit and apron sediments east of the Mariana Trench; and another half leg to drill site A2-2 200m into basement on M-18 east of the Bonins. WPAC requests proponents to provide seismic data which images to basement. Oceanic crust will not be reached at basin and apron sites south of Pigafetta Basin due to presence of Cretaceous volcanic layers. No good seismic data is available at A2-2. Crossing MCS lines exist at Site A1 (=BON-8, revised) between M-12 and M-13.

### Zenisu Ridge

WPAC considers intra-plate thrusting an important tectonic process best addressed in the western Pacific. The J-3 sites in the Japan Sea will not address the fluid aspects of this process. A revised French proposal addressing fluid processes at Zenisu has been submitted. WPAC awaits TECP review.

### Nankai II

Proponents of NKT-3 and -5 need to provide TECP with a more detailed proposal, documenting the reasons for drilling at the specific sites chosen.

### S.China Sea Margin

Several panels recognize the importance of drilling this margin but disagree on the exact sites. WPAC considers at least 2 holes necessary to characterize the northern margin subsidence history (one in little-stretched continental crust and one in transitional crust). These would also serve as important reference sites for the Taiwan collision and SOHP comparisons with the Japan Sea, NE Australia and Sulu-SCS Basins.

WPAC recommends the formation of a working group to review the extensive data sets and competing hypotheses, and to prepare a revised drilling program. Recommended members are: I.Dalziel (TECP) to act as chairman, K.Hsu (TECP), K.Hinz (TECP), D.Hayes (L-DGO), J.Peirce (SSP), R.Garrison (SOHP) and possibly C.Rangin (WPAC) and O.Eldholm or B.Tucholke (PCOM).

### NE Australia Margin

The extensive site survey data needs to be presented at our next meeting. Early review by PPSP is desirable.

### Vanuatu

The extensive site survey data needs to be reviewed at our next meeting. Immediate review by the WPAC chairman of original velocity analysis data at DEZ-2 (revised) is needed. Additional logging to monitor fluids at decollement sites DEZ-2 and -4 would add 3 days to the leg.

### Lau Basin

A DARWIN cruise with GLORIA, underway, geophysics, dredging and coring is scheduled for May 5-June 1, 1988. WPAC requests digital recording of seismic data across all sites, especially LG-2. A WASHINGTON cruise with SeaBeam and dredging is scheduled for January, 1989.

### Panel Membership and Liaison

WPAC thanks M.Audley-Charles and C.Rangin for their longstanding service to our panel. They have asked to be replaced by their national committees. WPAC recommends the appointment of (1) J.Eade (SOPAC) or (2) J.Daniel (ORSTOM) as member-at-large for the SW Pacific. J.Natland is recommended as new WPAC liaison to LITHP. Thanks to S.Scott for his previous service in that capacity.

### Fall Meeting

WPAC proposes to meet 27-29 October, 1988 in Darwin, Australia with a JOIDES RESOLUTION visit on 30 October. At this meeting the FY90 drilling and logging program will be revised.

WESTERN PACIFIC REGIONAL PANEL  
11-13 April 1988  
Hannover, FRG

Meeting Minutes

Attendance

B.Taylor, Chairman	N.Pisias (PCOM)
M.Audley-Charles (U.K.)	R.Jarrard (LDGO/BRG)
K.Brooks (ESF)	J.Pearce (LITHP)
J.Gill, UC Santa Cruz	R.Garrison (SOHP)
R.Hydman (at-large)	K.Hinz (TECP)
H.R.Kudrass (FRG)	H.Villinger (DMP)
G.Moore, U Tulsa	H.Meyer (SSP)
J.Natland, Scripps	C.Moss (JOIDES Office)
S.Scott (Canada)	
K.Tamaki (Japan)	
C.Rangin (France)	

B.Taylor called the meeting to order and introduced those present. H.Kudrass explained logistics and details about Thursday's field trip. Minutes of the previous meeting were approved.

PCOM Report

N.Pisias reported on the PCOM Annual meeting held 30 Nov-4 Dec 1987 in Sunriver, Oregon. At that meeting the FY89 program plan, which includes the first year of WPAC drilling, was defined. The FY89 program plan includes Legs 124 through 129 as defined by WPAC, and Leg 124E, a leg of approximately 31 operational days which will include engineering tests not yet specified. Pisias said that 9 legs will be devoted to programs in the CEPAC region with 4 legs targeted to address LITHP priorities, 3 for SOHP priorities and 2 legs for TECP priority programs.

NSF will submit the ODP program to the U.S. Science Board for review later this year, and the ODP budget for FY89 is \$36.0 million, only \$0.5 million higher than FY88.

A PCOM subcommittee met at the annual meeting to evaluate the JOIDES advisory structure. Their final report proposes changing the current panel structure by splitting SOHP into two panels, one on sedimentary processes and biogenesis and one on paleoceanography. It is recommended that regional working groups be short-lived and detailed working groups, such as the EPR-WG, be used to address specific programs. PCOM will formulate final recommendations at their next meeting (19-22 April 88) and forward them to EXCOM for action.

LITHP Report

S.Scott reported LITHP's discussion of the Reference Site program. LITHP proposes one leg to drill MAR-4, -5 and -6; the oceanic crust, a seamount summit, and apron sediments east of the Marianas; and a subsequent half leg to drill site A2-2 200m into basement on M-18 east of the Bonins. LITHP questioned whether 200m basement penetration is sufficient to answer geochemical questions, although it is felt that 200m is sufficient to date the M-Series. No recommendation was made on this issue.

## SOHP Report

B.Garrison reported that at its last meeting SOHP discussed the Reference Site program, suggesting that an old Pacific site would be best, but specific site suggestions were not made. SOHP would like to incorporate other objectives and not devote the leg solely to geochemical problems.

The SCS Margin transect was discussed at length in light of sea level and paleoceanography objectives. There is strong support, but some concern such as dating of siliciclastic sediments. SOHP prioritized SCS sites as follows: (1) SCS-1, (2) SCS-4, (3) SCS-3, (4) SCS-2.

With regard to the NEA Margin program, SOHP raised 3 issues:

1. There was disagreement as to how optimistic drilling time estimates are. If sites must be dropped, sites 9A and 10 can be combined to achieve the objectives of both. Also, if time runs short, SOHP feels site 13 should be dropped.
2. SOHP is interested in premineralization environments with respect to Mississippi Valley type mineralization.
3. This leg would be a very interesting comparison with the SCS Margin, with regard to sea level changes.

There is an age problem with respect to the E-W transect, and one hole should be deepened. However, the western sites are in the park and permission to drill will be unlikely for holes deeper than currently indicated (500m).

## TECP Report

K.Hinz reported that TECP reviewed proposal 46/D (revised) expressing concern with the proposed model and questioning the need for 4 sites. Also, drilling on only one flank may not answer many of the questions. TECP is interested in the proposed problem but advises that the data holders should better coordinate the available data.

The Sulu Sea proposal was reviewed and TECP supports all sites with the exception of SS-4. Questions were raised with respect to the age of flow basalts, but Hinz is confident that the proposed sites are all eastward of the flows and are all on oceanic crust. With respect to site SS-4, TECP feels that this site is "tectonically exciting" but is extraneous to the primary goals of the leg.

Proposals 260 and 267 were reviewed and both are supported. TECP feels they could be combined with the geochemical reference holes to address dating of magnetic anomalies. Questions were raised concerning proposal 155/F and the downhole time required for this program. TECP supports the objectives of this proposal but has reservations about the trade-offs.

Proposals 259 and 301 were reviewed. Sites NKT-1 and NKT-2 were previously approved and two new sites, NKT-3 and NKT-5 are now proposed. TECP has asked the proponents for more data and more consistent interpretations. TECP would also like better justification for fluid sites NKT-3 and NKT-5, but stands with the previous approval of NKT-1 and -2.

Proposal 177 (Taira, et al) was reviewed and TECP still feels this is not a very attractive proposal. Biostratigraphic dating problems result in the low priority rating. A revised proposal (Lallemant, et al) has been prepared but was not received by TECP in time for review.

TECP has prioritized the following programs for the CEPAC region:

1. M-Series Dating
2. Lithosphere Flexure
3. Ridge-trench Interaction
4. Pre-70 ma Plate Motions
5. Deformation in Accretionary Prisms

Preparation of a TECP white paper is underway.

#### DMP Report

H.Villinger reported that PCOM has asked DMP to monitor development of third party tools in the future. USSAC has scheduled two logging schools in the U.S., however no travel funds are available. R.Jarrard should be contacted for schedules and details.

A feasibility study for the Geoprops probe has been completed which is very positive. The tool will be developed by TAMU for a cost of \$100,000. There is a problem with timing as a proposal has not yet been submitted and the NSF funding cycle is not conducive to having funds available before the end of the year.

DMP has consistently recommended that the Nankai geotechnical program be integrated with Nankai Trough drilling (Leg 127). (WPAC agrees that it is scientifically desirable but logistically infeasible.) Proposal 301/D attempts to reintegrate these programs but DMP has not yet seen this proposal. Specific recommendations for WPAC legs were presented by R.Jarrard who met with P.Worthington immediately prior to this meeting (see Appendix A).

#### TAMU Report

N.Pisias reported that the RESOLUTION, currently on Leg 120, steamed to Freemantle due to a shipboard medical emergency, and is currently on its way back to complete the Kerguelen sites. As a result, Leg 120 has been extended by 4 days; these days may be taken out of the Leg 122 and 123 schedules.

June 3, 1988 is the drop dead date for Banda/Sulu drilling clearances (Leg 124). L.Garrison (TAMU) says that Philippine clearances are likely before that date, but Indonesian clearances do not look promising.

With respect to the Exmouth Plateau program, PPSP has eliminated sites EP-6, -7 and -12 as they are in a gas producing area. Site EP-6 is absolutely excluded, but PPSP will allow relocation of the two plateau sites so that they twin existing industry holes. BP engineers will be on site to assist if necessary. Pisias said it is essential for PPSP to be involved very early on complex legs and pointed to specific examples such as the Japan Sea and NEA Margin programs.

#### Borehole Research Group Report

R.Jarrard reviewed current Schlumberger and specialty logs and logging tools currently available and in use by the program. Most specialty tools will be on line for the WPAC program. Exceptions will be the Formation Microscanner (FMS)

which should be ready for Leg 125, and the wireline packer which will be tested on Leg 124E. Several third party tools are also available.

Leg 124: Banda/Celebes/Sulu/SCS  
Co-Chiefs: K.Hinz (FRG), E.Silver

Sites currently under consideration are BNDA-1, BNDA-2, CEL-1, SS-2, SS-3, SCS-5b, SCS-10 and SCS-11, and SS-1. Taylor reiterated the need for clearances by June 3, 1988.

#### BANDA SEA

The site survey cruise planned by E.Silver did not take place. New data from the recent DARWIN cruise was available at the meeting and G.Moore and H.Meyer were asked to review it. After reviewing the new data, Meyer said that basement is still not clearly imaged to SSP's satisfaction and site BNDA-1 will therefore not be approved. BNDA-2 has been approved, based on current data. Site BNDA-3 will not be developed for consideration as an alternate site as there is insufficient site survey data and it was not included in the clearance request.

#### CELEBES SEA

The Celebes Sea site (CEL-1) has been approved by SSP.

#### SULU SEA

K.Hinz reviewed maps and seismic lines. The consensus was that sites SS-1, -2 and -3 should be forwarded to SSP for review as alternate sites for the Sulu Basin, with SS-3 being highest priority. As TECP has dropped site SS-4, WPAC does not see it as an alternate site to SS-1, -2 and -3, but as a separate tectonic objective. Further proposals for this site should be directed to TECP.

#### SO.CHINA SEA

The U.S. State Department has requested that all sites be in undisputed Philippine waters. Alternate sites (SCS-10 and -11) in Philippine waters can be defined but are less desirable (not in SW sub-basin, or not in well-identified magnetic lineations) than SCS-5b or SCS-9 alternates on BGR MCS line 17, on magnetic anomalies 6-6B. [N.B. A further review of seismic data in the vicinity of SCS-11 by the Chairman, subsequent to the meeting, shows bright spots and evidence for gas charged turbidite layers. This is not an acceptable alternate site.]

After reviewing all sites, some discussion took place as to how to fit two sites into 41 available days. Logging times were reviewed and R.Jarrard stated that susceptibility measurements would be useful but are not essential; this allows 0.4 days to be cut from logging time. He also suggested waiving the televiewer, eliminating an additional 1.0 day of logging time. The possibility of changing ports to save some time was considered, but this resulted in a savings of less than 1/2 day.

It was pointed out that the major emphasis in thematic evaluation of this program was the comparison of these basins; time constraints are limiting the ability to successfully achieve this objective. Also, previous planning was based on 6 sites to be drilled over 2 legs (both shortened for logistical purposes). It now appears that a second leg will not be available to meet the original objectives.

If the Banda sites receive clearance, BNDA-2 and CEL-1 could be drilled within 41 days, but unless the second leg is added the integrity of the entire program is jeopardized.

If the Banda sites do not receive clearance, the only alternative is to expand the program to a full leg in order to drill the three other basins and eliminate the need for a second leg. The minimum time required to drill any other two sites is 43 days. Options for completing sites in all three basins include either expanding to a 60 day leg which will bring the ship into port after the holiday season, or picking up a third site by adding it to Leg 124E. Priority sites under this scenario are CEL-1, SS-3, and SCS-5b.

#### LEG 124E: Engineering Test Leg

DMP has recommended 7 days of LDGO testing for Leg 124E. Two primary objectives have been prioritized by TAMU:

- Testing of deep water (7-8m) drilling capabilities and bending stress will be conducted in the Mariana Trench. Some cores will be taken but only surficial sediments.
- A top-drive slimline diamond coring system will also be tested. The maximum drill rod length for this test will be 1800m. The currently preferred site is new Site 292 on the Benham Rise, but various sites in the Carolines, Marianas and Philippines are being considered.

A revised program will be submitted to PCOM for approval at the next meeting. R.Jarrard reported that testing of the FMS, heave compensator, geoprops tool and wireline packer, may also be added.

#### LEG 125: Bonin-Mariana

Co-Chiefs: P.Fryer and J.Pearce (U.K.)

Sites include (in order of priority) BON-6 (re-entry), MAR-3a and MAR-3b, with BON-7 as an alternate site, for a total of 56 days.

J.Pearce raised the question as to priorities if time remains after drilling BON-6, MAR-3a and MAR-3b. Should basement drilling be continued at BON-6 or should they move on to BON-7? Taylor noted that if MAR-3a and -3b were only drilled to a depth of 500m each, there would be sufficient time to drill both BON-6 and -7.

J.Gill noted that Ishii's dredging at BON-7 had dispelled questions concerning petrological differences between the Mariana and Bonin serpentinites. It was agreed that there would be benefits from having samples from both Mariana and Bonin serpentinites, however given the uncertainties in the rates of serpentinite drilling, the final decisions would have to be made by the shipboard party. It was suggested that Pearce bring up this issue at the next LITHP meeting and possibly also bring it to the attention of TECP.

R.Jarrard reviewed downhole measurements planned for this leg (see Appendix A). Time is included for fluid sampling but it is not clear whether the FMS will be ready for use.



LEG 126: Bonins

Co-Chiefs: B.Taylor and T.Ui (J)

Sites include BON-1, BON-2 (mini cone), BON-5a and BON-5b for a 58 day leg.

Magnetic susceptibility is planned for BON-2 and induced polarization at BON-1, in addition to FMS, wireline packer and standard tool runs at both sites. It is not yet certain whether an induced polarization tool will be available, but logging estimates do include time for this experiment.

K.Tamaki reported on high heat flow observations that suggest bottom hole temperatures of 50-300<sup>0</sup> C at BON-1. SSP has asked that a heat flow transect be done in order to locate this site away from possible local highs. GSJ has been asked to conduct a heat flow transect during a cruise this August.

LEG 127: Nankai

Co-Chiefs: I.Hill (U.K.) and A.Taira (J)

A 57 day leg is planned to include NKT-1 and NKT-2 (re-entry). R.Jarrard reviewed a strawman logging plan including geoprops uncertainties (Appendix B).

Regardless of geoprops use, total logging and geophysical properties time will be approximately 22 days. A pilot hole will be established to 400m at NKT-2 and then washed to a depth of 1300m, followed by extensive logging and downhole measurements. Site NKT-2 (re-entry) will then be cored and VSP and packer experiments conducted. NKT-1 will be cored and logged.

DMP has consistently recommended offset vertical seismic profiling at NKT-2. R.Jarrard estimated that it would take about one day to complete offset VSP, and it appeared that tool availability would not be a problem. Pending the logistics of a second ship, it was agreed that this experiment should be added to the program.

A new proposal has been submitted which includes two new sites, NKT-3 and NKT-5. These sites are landward of the existing sites and address fluid flow objectives. TECP has asked the proponents for additional data and better justification for these sites, and has therefore not referred them to WPAC for action.

LEG 128: Japan Sea I

Co-Chiefs: K.Tamaki (J) and tba

Sites J1b (re-entry), J1d, J1e and J3a are scheduled for a 56 day leg.

SSP recommends relocation of site J1d as it is near a gas charged layer and the older sedimentary sequences are not available in this area. It may be difficult to find an alternate site. However J1d is a high priority site, the only one in the Japan Basin. Several site survey cruises are scheduled for 1988 and early 1989 and this data will be forwarded to SSP as soon as it is available. Proponents also plan to meet with PPSP chairman later this month to review preliminary data and discuss the gas problem.

Seismic profiles do not adequately image structure beneath Site J3a and SSP also recommends its relocation. K.Tamaki proposed site J3b as an alternate site. MCS data is already available for this site and it will be submitted to SSP for review at their next meeting. It was agreed that Site J3b be substituted for Site J3a.

R.Jarrard reviewed the logging program (Appendix A) and said that estimates for logging time appear to be too high. It was requested that site-by-site drilling and logging time estimates be re-checked by TAMU and LDGO.

LEG 130: Japan Sea II

Co-Chiefs: K.Suyehiro (J) and tba

A 41 day leg is planned for sites J2a and JS-2, including 10 days for a return to Site J1b to conduct downhole seismometer deployment and oblique seismic experiments.

Japan Sea Co-Chief Nominations

Additional co-chief recommendations for the two Japan Sea legs include:

Paul Baker (Duke)	Kerry Kelts (ESF)
Steve Calvert (Canada)	Judy McKenzie (ESF)
Gerhardt Einsele (FRG)	Ken Pisciotto (San Francisco)
Carolyn Isaacs (USGS)	Allistair Robertson (U.K.)
Hugh Jenkyns (U.K.)	Hans Schrader (ESF)

FY90 WPAC Program

GEOCHEMICAL REFERENCE SITES

LITHP previously recommended three oceanic crust sites, MAR-4, MAR-5, MAR-6 and one deep site (200 m into basement), BON-8, for a program of about one and a half legs.

LITHP now recommends relocating BON-8, which lies between magnetic anomalies M-12 and M-13, to site A2-2 which lies on M-18. J.Pearce explained that A2-2 was seen as a compromise choice which would achieve geochemical reference hole objectives, as well as objectives described in the Handschumacker, et al proposal. However, supporting seismic data was not available at the meeting for LITHP review.

WPAC notes that BON-8 (Handschumacker's A1 site) is the only site for which crossing MCS lines are available. WPAC requests that the proponents provide seismic data which will define basement at all proposed reference sites. Also, it was clarified that oceanic crust will probably not be reached at the Mariana basin and apron sites due to the presence of Cretaceous volcanic layers. LITHP should decide whether this is important.

ZENISU RIDGE

WPAC considers intra-plate thrusting an important tectonic process which is best addressed in the western Pacific. The J-3 sites in the Japan Sea program will not address the fluid aspects of this process. A revised French proposal addressing fluid processes at Zenisu Ridge has been submitted. WPAC awaits TECP review.

NANKAI II

Pending proponents response to TECP request for additional data regarding proposed sites NKT-3 and NKT-5, WPAC awaits evaluation of this program.

## S.CHINA SEA MARGIN

TECP is split with regard to this program. While members agree on the thematic importance of China margin drilling, they disagree as to exactly which sites should be included in the program (conjugate margin sites?, sites away from fracture zones).

As several other panels also agree with the thematic importance of China margin drilling, WPAC recommends the formation of a working group to review the extensive data and competing hypotheses, and to prepare a revised drilling program. Recommended members are I.Dalziel (TECP) to act as chairman, K.Hsu (TECP), K.Hinz (TECP), D.Hayes (Proponent), J.Pierce (SSP), R.Garrison (SOHP), and possibly C.Rangin (WPAC) and B.Tucholke or O.Eldholm (PCOM).

WPAC feels that at least two sites are necessary to characterize the northern margin subsidence history (one in little-stretched continental crust and one in transitional crust). These would also serve as important reference sites for the Taiwan collision and SOHP comparisons with the Japan Sea, NE.Australia Margin and Sulu/SCS Basins.

## NE.AUSTRALIA MARGIN

WPAC urges that the required site survey data be provided to SSP in time for review of this program at their next meeting. It was also noted that since WPAC will meet in Australia in October, Peter Davies should be invited to attend the meeting in order to give a presentation on this extensive data set.

## VANUATU

New site survey data was reviewed and discussed, along with a proposal to move site DEZ-2 closer to the collision site.

Because the overriding plate at DEZ-2 may be igneous forearc material, WPAC requested to see the original detailed velocity analysis data at the crossing point between the LEE 104 and French 1022 lines. This information should be sent to B.Taylor for immediate review. The whole site survey data package and revised sites are planned to be reviewed at the next SSP and WPAC meetings.

DMP recommends decollement permeability and pore fluid sampling which would add approximately 1.5 days per site for DEZ-2 and DEZ-4. Detailed logging estimates will be prepared in conjunction with DMP before this program is submitted for PCOM review in December.

## LAU BASIN

A GLORIA cruise in May will conduct 2 channel seismic reflection surveys across sites LG-1, -2 and -7 and will attempt to locate the spreading axis between this transect and Valu Fa. In addition, gravimeter and magnetometer surveys, as well as dredging and sediment coring will be conducted.

A WASHINGTON survey, including Seabeam and dredging, is planned for January, 1989, however this data will not be available for presentation to PCOM in December, 1988. WPAC therefore strongly encourages digital recording on the GLORIA cruise as playback and enhancement may be necessary.

## Panel Membership

M.Audley-Charles and C.Rangin request rotation off the panel following this meeting. Replacements for both will be named by their respective national committees. Both were thanked for their longstanding service to the panel.

Nominations were taken for the at-large position previously held by J.Recy. Concensus was reached on two names and a vote (8-1-2) was taken as to the priority of the nominations: (1) Jim Eade (SOPAC); (2) Jacques Danielle (ORSTOM).

B.Taylor will resign as chairman following the October 1988 meeting, and S.Scott has asked to be replaced as LITHP liaison. J.Natland agreed to serve as LITHP liaison. Scott was thanked for his previous service in that capacity.

## Next Meeting

The next WPAC meeting was tentatively set for 27-29 October, 1988 in Darwin, Australia, pending PCOM approval. A field trip will be scheduled to visit the JOIDES RESOLUTION while it is in port there. A February, 1989 meeting is tentatively set for College Station, with dates to be decided in October.

## Homework

In order to have an airtight drilling plan ready for the December PCOM meeting, panel members were assigned the preparation of a detailed program summary which includes drilling and logging plans for each site, time estimates, site objectives and other pertinent comments. Panel members are to coordinate with TAMU and LDGO Borehole Research Group to insure the accuracy of these summaries, and have them to B.Taylor no later than July 1, 1988. The following assignments were made:

B. Taylor: Legs 124, 125, 126  
G. Moore: Leg 127  
K. Tamaki: Legs 128, 129  
J. Natland: Reference Sites  
C. Rangin: Zenisu Ridge, Vanuatu  
H. Kudrass: SCS Margin  
S. Scott: NEA Margin  
J. Gill: Lau Basin

The meeting ended at 1200, leaving the chairman to write an executive summary for PCOM, and C. Moss to type the minutes, during the afternoon.

## Field Trip

WPAC thanks Franz Kockel for leading an excellent field trip (April 14), overlooking Paleozoic intra-continental deformation and ending with a visit to the Rammelsberg Mine.

## Appendices

- A. Notes on Logging in WPAC Program
- B. Leg 127 Strawman Logging Plan
- C. Site Summaries, Legs 124-129
- D. Leg Summaries, Legs 125-126

NOTES ON LOGGING IN WPAC PROGRAMME  
LEGS 124 - 130

This note summarises discussions between P F Worthington and R D Jarrard held at the BP Research Centre, Sunbury-on-Thames, England, on 8th April 1988. As such the content reflects the latest views of DMP, with appropriate input from the Logging Contractor, on the logging schedule for ODP Legs 124-130.

One general point is that a 10% contingency should be added to all calculated logging times so that minor tool problems need not prejudice entire logging runs.

**Leg 124 - Sulu/SCS**

As tabled with standard suite for new site (Celebes)

**Leg 125 - Bonin/Mariana**

**Priorities**

1. Standard Suite (to include FMS if available) in all holes
2. Wireline Packer in MAR 3A and BON 7
3. BHTV in MAR 3A
4. Packer experiment in BON 6
5. BHTV in BON 6 (becomes higher priority if FMS not available)
6. Magnetometer/susceptibility in BON 6

**Leg 126 - Bonin**

**Priorities**

1. Standard Suite (to include FMS) in all holes
2. Wireline Packer in BON 1 and BON 2
3. Wireline Packer in BON 5A and BON 5B
4. Induced Polarization in BON 1 and BON 2 (if mineralization is encountered)

## Leg 127 - Nankai

### Priorities

1. Standard Suite to include FMS [to be run in stages]  
Wireline Packer  
BHTV  
Dual Laterolog  
MCS (if 12-channel shear source tool available)  
Geoprops Probe  
..... all in both holes  
  
VSP (zero offset) in NKT 2  
Temperature (Japanese Expt) in NKT 2
2. Packer in NKT 2 (higher priority may be desirable)
3. VSP (zero offset) in NKT 1

## Leg 128 - Japan Sea I

### Priorities

1. Standard Suite to include FMS in all holes
2. BHTV in J1b and J1e
3. Magnetometer/susceptibility in J1b and J1e
4. Packer/hydrofracc. at J1b (could be carried out during Leg 129)
5. VSP at J1b

## Leg 129 - Japan Sea II

### Priorities

1. Standard Schlumberger Suite with FMS in J2a and JS-2
2. Return to J1b, deploying seismometer array, geoelectrical study, oblique seismic experiment
3. Induced polarisation in J2a

4. VSP in J2a
5. Wireline Packer in J2a

**Leg 130 - Geochemical Reference Leg**

**Priorities**

1. Standard Schlumberger Suite with FMS in both holes  
Two passes with geochemical logging tool
2. Packer in BON 8 and in MAR 5 or 6 subject to 50m of basement minimum
3. BHTV in BON 8 and in MAR 5 or 6
4. Dual laterolog in BON 8
5. VSP in BON 8
6. Magnetometer/susceptibility log in BON 8
7. Wireline Packer in BON 8
8. Dual laterolog in MAR 5 or MAR 6
9. VSP in MAR 5 or MAR 6
10. Magnetometer/susceptibility log in MAR 5 or 6
11. Wireline Packer in MAR 5 or 6

The next DMP meeting is scheduled for early June 1988 to consider logging recommendations for Legs 131-136 together with any points WPAC might wish to raise in connection with the above.



Paul F Worthington  
Chairman - DMP  
8 April 1988

# NANKAI

## NKT-2 PILOT HOLE

#days

- 0.5 CORE TO 400m (4 WSTP @ 30m, 2 GEOPROPS)
- 1.1 WASH HOLE TO 1300m (2 more GEOPROPS)
- 1.5 STANDARD LOGGING
- .45 FMS (FORMATION MICROSCANNER)
- .3 DUAL LATEROLOG
- .55 MULTICHANNEL SONIC (SHEAR SOURCE)
- 2.5 TEMPERATURE DEPLOYMENT

## NKT-2 MAIN HOLE (XCB THEN ROTARY CORE TO 1300m)

	G	NO G
2.25	18 GEOPROPS	1.0 TRIP TO RELEASE BIT +
-	DROP BIT IN HOLE	INSERT PACKER
.45	FMS	.45 FMS
1.0	4 WIRELINE PACKER	1.0 4 PACKER
1.2	VSP	1.25 4 WIRELINE PACKER PLUS
		FLUID TESTS
		1.2 VSP

NKT-2 TOTAL 11.8

## NKT-1

#days

- 0.7 WASH TO 900m (NOT INCL TRIP)
- 1.3 STANDARD LOGGING
- .35 FMS
- .45 MULTICHANNEL SONIC

	G	NO G	NO G
1.0	VSP	1.5 6 WIRELINE PACKER	1.0 4 WIRELINE PACKER
1.75	APC/XCB (4 WSTP	1.0 VSP	1.0 MINIKONE +
	+ 12 GEOPROPS)	.25 APC/XCB (4 WSTP)	PIPE TRIP
.75	EXTRA CORING	.75 EXTRA CORING	1.0 4 PACKER
			.25 APC/XCB (4 WSTP)

NKT-1 TOTAL 6.05

11.8 + 6.05 + 10% CONTINGENCY ≈ 20 DAYS



Leg 124

Site	Water Dep	Sed. (m)	Drill Day	T H2O	Logging	Total	In Leg
BNDA-1a	5000	1000	14.5	0.9	1.5	16.9	
BNDA-2	4800	900	13	1	1.6	15.6	
SS3	4270	1170	15	1.2	2.2	18.4	
SS2	4320	950	13.5	1	2.2	16.7	
• SS1	4615	1065	14.7	1.1	2.2	18	18
• CEL-1	4885	750	12.2	0.7	1.6	14.5	14.5
SCS-5B	4350	750	12	0.7	1.6	14.3	
• SCS-10	4125	550	7.3	0.5	1.3	9.1	
SCS-11	4000	950	13	0.9	2	15.9	
Total			115.2		16.2	139.4	32.5
Transit						10	10
Contingency						0	0
TOTAL						149.4	42.5

Drilling Plan:

APC/XCP into basement CEL-1, SCS10, BNDA-1, SCS5B; RCB to basement SS3, BND2, SS2, SCS11

Logging Plan: 3 standard runs at all sites

Leg 125

Site	Water Dep	Sed. (m)	Base (m)	Drill Day	Logging	Total
MAR-3A	3100	700		9.6	2.3	11.9
MAR-3B	4300	700		10.3	1.9	12.2
BON-6	2850	950	150	17.5	3.1	20.6
BON-7 (alt)	4650	500		7.8	1.8	9.6
BON-6 Re-Entry			0	0	0	4
				0	0	0
Total				45.2	9.1	48.7
Transit						5.5
Contingency						1
TOTAL						55.2

Drilling Plan:

MAR3A/MAR3B/BON7: APC to 200 meters; RCP to TD; temp and fluid samples every 50 meters at MAR3A and 100 meters other. BON6: APC/XCP to 500 meters; re-entry to TD; temp and water measurements every 100m.

Logging Plan:

FMS and 2 standard runs at each site; wireline packer at MAR3A/3B/BON7; Packer (Keir Becker) mag/susc at BON-6; BHTV at MAR3A and BON6

Leg 126

Site	Water Dep	Sed.(m)	Base (m)	Drill Day	Logging	Total
BON-1	2270	1050		11.7	2.3	14
BON-2	1100	1200		12.6	2.3	14.9
BON-5A	2700	950	50	9.4	1.5	10.9
BON-5B	3400	900	50	13	1.6	14.6
				0	0	0
<b>Total</b>				<b>46.7</b>	<b>7.7</b>	<b>54.4</b>
Transit						2
Contingency						1
<b>TOTAL</b>						<b>57.4</b>

Drilling Plan:

BON-1: APC/XCP to 400m;RCB to TD. mini-cone; BON-2: RCB to TD; BON-5A: APC to 200m; RCB to TD; BON-5B: RB to TD.

Logging Plan:

FMS and 2 runs all sties; Mag.Suc. BON-2; wireline packer BON-1, 2; Induced polar BON-1

Leg 127

Site	Water Dep	Sed.(m)	Base (m)	Drill Day	Logging	Total
NKT-1	4803	900	0	11.4	4.1	15.5
NKT-2	4730	1300	0	18.6	3.5	22.1
Other Logging				0	0	0
logs inc bhtv,pack,mcs,vsp				0	15	15
<b>Total</b>				<b>30</b>	<b>22.6</b>	<b>52.6</b>
Transit						2
Contingency						1
<b>TOTAL</b>						<b>55.6</b>

Drilling Plan:

NKT-1: APC/XCB to 400M; RCB to TD; NKT-2: re-entry site.

Logging Plan:

Leg 128

Site	Water Dep	Sed.(m)	Base (m)	Drill Day	Logging	Total
J-1b	2780	700	100	15.8	5	20.8
J-1d	3170	350	30	4	2.6	6.6
J-1e	2890	830	50	8	3.1	11.1
J-3a	2040	700	30	6.6	2.4	9
Total				34.4	13.1	47.5
Transit						6
Contingency						2
TOTAL						55.5

Drilling Plan:

J-1b: Re-entry; J-1d:RCB to TD; J-1e: APC/XCB to 350m, free-fall cone  
RCB to TD

Logging Plan:

J1b: BHTV, Mag/Susc/VSP/Packer; J1e, J3a: BHTV, mag/susp; J-3a:  
Hydrofrac.

Leg 129

Site	Water Dep	Sed.(m)	Base (m)	Drill Day	Logging	Total
J-2a	2050	1390		17.7	4	21.7
JS-2	998	600		4	1.2	5.2
Logging and return to J-1b				0	0	10
Total				21.7	5.2	36.9
Transit						2
Contingency						2
TOTAL						40.9

Drilling Plan:

Re-entry at J-2a; JS-2:

Logging Plan:

JS-2a: Packer and VSP; VSP, Oblique and seismometer at J-1b.

LEG 125: BONMAR (P. Fryer, J. Pearce)

<u>Site #</u>	<u>Lat.</u> <u>Long.</u>	<u>Water</u> <u>Depth</u>	<u>Penetration</u> <u>Sed.</u>	<u>Drill</u> <u>Bsmt.</u>	<u>Log</u> <u>Days</u>	<u>Total</u> <u>Days</u>	<u>Clearance</u>	<u>Prop.*</u>
MAR3A	19°32'N 146°39'E	3100	700?		9.6	2.3	11.9	N Marianas 172R
MAR3B	19°27'N? 146°39'E?	4300?	700?		10.3	1.9	12.2	N Marianas 172R
BON6*	31°54'N 141°06'E	2850	950	150	21.5	3.1	<u>24.6</u> 48.7	Japan 171

ALTERNATE SITE

BON7	30°58'N 141°48'E	4650	500?		7.8	1.8	9.6	Japan 171
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<u>Total Days:</u>	Transit (Guam-Tokyo)	5.5
	Operational	48.7
	Contingency	<u>2.0</u>
		56 days

Drilling Plan: MAR3A/3B/BON7: Hole A - APC to 200m  
Hole B - RCB to T.D.

(temp. meas. & fluid samples every 50m at MAR3A, & 100m at others)  
(Drilling depths and times at these sites are guestimates as the structures are seismically incoherent and the drilling conditions are poorly known - assumed rotating time: 10m/hr.)

BON6: Exploratory APC/XCB hole to 500m  
Re-entry RCB hole to T.D.  
(temp. meas. & fluid samples every 100m)

Logging Plan: FMS and 2 Schlumberger runs at each site.  
Wireline packer at MAR3A/3B/BON7  
Packer and mag/susc at BON6.  
Televiwer at MAR3A and BON6.

Comments: Main objectives: studies of fluids, timing of emplacement, igneous and metamorphic petrology at the serpentine diapir sites; vertical tectonics, forearc stratigraphy, igneous petrology (boninites & early arc tholeiites) and paleo-rotations at BON6.  
: BON7 is only an alternate (not a duplicate) site because there is insufficient time, given these guestimates, to drill it in one leg.

LEG 126: BONIN (B. Taylor, T. U1)

<u>Site #</u>	<u>Lat.</u> <u>Long.</u>	<u>Water</u> <u>Depth</u>	<u>Penetration</u> <u>Sed.</u>	<u>Drill</u> <u>Bsmt.</u>	<u>Days</u>	<u>Log</u> <u>Days</u>	<u>Total</u> <u>Days</u>	<u>Clearance</u>	<u>Prop.#</u>
BON1	30°55'N 139°53'E	2270	1050	--	11.7	2.3	14.0	Japan	171
BON2*	30°55'N 140°00'E	1100	1200		12.6 (16.5)	2.3	14.9 (18.8)	Japan	171
BON5A	32°26'N 140°47'E	2700	950	--	9.4	1.5	10.9	Japan	171
BON5B	32°23'N 140°48'E	3400	900	50	13.0	1.6	<u>14.6</u> 54.4	Japan	171

ALTERNATE SITES

BON3	31°32'N 140°17.4'E	1250	860	40	8.5	1.2	9.7	Japan	171R
BON4	32°22'N 140°22.5'E	1840	750	50	8.6	1.5	10.1	Japan	171R

<u>Total Days:</u>	Transit (Tokyo-Yokohama)	2.0
	Operational	54.4
	Contingency	<u>1.6</u>
		58 days

Drilling Plan: BON1: HoleA - APC/XCB to 400m  
 HoleB - RCB to T.D. with mini-cone re-entry  
 BON2: RCB hole to T.D. with mini-cone re-entry  
 (Alternate scenario: HoleA - Exploratory RCB hole: 500m  
 HoleB - Re-entry RCB hole to T.D.)  
 BON5A: HoleA - APC to 200m  
 HoleB - RCB to T.D.  
 BON5B: RCB hole to T.D. with mini-cone re-entry  
 (temperature meas. & fluid samples every 100m at each site)

Logging Plan: FMS and 2 Schlumberger runs at each site  
 Mag/susc. at BON2 Wireline packer at BON1 & 2  
 Induced Polarization at BON1

Comments: Main objectives: BON1&2: vertical tectonics, rifting history, syn-rift sedimentation and volcanism, hydrothermal circulation, and nature of pre-rift and intra-arc strata. BON5A&B: vertical tectonics, forearc stratigraphy and basement, paleo-rotations.  
 : Alternate sites do not duplicate main sites: BON3 is on frontal arc high and BON4 is on inner forearc basin.  
 : A heat flow transect is needed across BON1 (GSJ 8/88?) to site hole away from possible local high heat flow areas.  
 : ALVIN dive suggests BON2 will sample interlayered volcanoclastics, pumice and basalt.