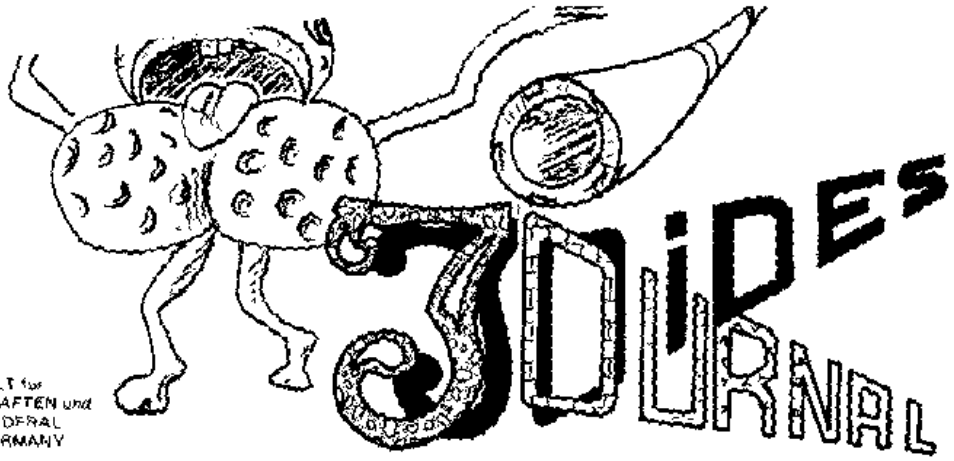

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APRIL 1976 No. 5 1976/2

IPOD II

The future plans for IPOD have been discussed at length by both the Planning and Executive Committees and by the panels. In the original plan it was intended that IPOD I should be of three years duration, followed by a three year IPOD II phase of margin drilling. It was later recommended that this plan be modified to have a four year IPOD I program allowing some ocean margin as well as ocean crustal drilling to take place early in the program.

The IPOD II concept as it currently stands requires a longer drill string, a riser and blow-out prevention system which implies the use of a new drilling vessel or platform. The riser design and manufacture requires a four-year lead period and to go ahead with this according to the current schedule would require that this item is written into the NSF proposal to be submitted this month.

This new program would be more expensive, costing approximately $60m per annum. There would be considerably fewer, though deeper holes drilled, but the greatest innovations would be the use of advanced technological methods as yet untried in deep water and the opening up of a new domain of sites to JOIDES.

The Executive Committee consider that progress into IPOD II is clearly desirable, but that such an innovative and expensive program should have ample planning. It would be irresponsible to go ahead without an experimental period with the new riser and thus the currently scheduled commencement for IPOD II in 1980 is impracticable. It is also essential that these deep sites should have the maximum site surveying

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TENTATIVE SCHEDULE - IPOD

LEG	PORT	ARRIVAL DATE	DEPARTURE DATE	DAYS AT SEA	PURPOSE
45	Norfolk, Va.	Shipyard	30 Nov.	52	High mid-Atl. Ridge Layer 2 & 3; 22°
46	San Juan, P.R.	20 Jan.	28 Jan.	43	cont. Leg 45 site; alt. lower W side of Ridge.
47A	Las Palmas	10 Mar.	17 Mar.	21	Margin off W. Africa
47B	Vigo	10 Apr.	10 Apr.	29	and Portugal
48	Brest	10 May	13 May	51	N.E. Atlantic Margin
49	Glasgow	29 June	2 July	53	Norwegian Sea
50	Reykjavik	24 Aug.	27 Aug.	54	N.S. transect Mid. Atl. Ridge
51	Azores	20 Oct.	23 Oct.	53	Moroccan Basin
52	Azores	15 Dec.	18 Dec.	56	E-W crustal transect
53	Balboa	13 Feb. 77	17 Feb.	53	W. Flank E. Pac. Rise; about 22° N
54	Honolulu	11 Apr.	14 Apr.	53	old W. Pac. paleoenvironments; seamounts
55	Honolulu	6 June	9 June	53	old W. Pac. ocean crust; seamounts
56	Tokyo (drydock)	1 Aug.	12 Aug	55	Sea of Okhotsk, Japan Trench flanks
57	Kobi	6 Oct.	9 Oct.	53	Philippine Sea
58	Guam	1 Dec.	4 Dec.	53	Philippine Sea - Shikoku Basin
59	Guam	26 Jan. 78	29 Jan.	53	Ontong-Java Plateau-Nauru Basin
60	Honolulu	23 Mar.	26 Mar.	53	Paleoenvironments-seamounts, NE Hawaii
61	San Diego	18 May	21 May	51	E. Pacific Rise
62	Acapulco	11 July	14 July	53	Gulf of California
63	Acapulco	5 Sept.	8 Sept.	53	Sequeiros Fracture Zone Area
64	Acapulco	31 Oct.	3 Nov.	53	mid-America Trench-Peru Chile Trench
65	Balboa	26 Dec.	29 Dec.	54	Vema Fracture Zone
66	Recife	22 Feb. '79	25 Feb.	52	S. Atl. paleoenvironments
67	Luanda	18 Apr.	21 Apr.	53	S. Atl. paleoenvironments
68	Las Palmas	13 June	16 June	53	extreme W. Atlantic
69	Norfolk	8 Aug.	11 Aug.	54	Jurrassic Age W. Atl.
	Galveston	4 Oct.	Demobilization		

The dates for Legs 48 onwards are subject to change.

and the site survey program should begin well in advance of the drilling.

The dilemma currently facing us is whether to go ahead with the expensive engineering development now for the riser system, or whether the money should instead be spent on more re-entry cones, a logging program, improving core retrieval, etc., all of which are in great demand at the moment. So far $116K has been spent on an engineering feasibility study and the proposed cost of research and design for the riser is $1.6m. A complete steel riser without buoyancy would cost approximately $30m, complete with all back-up gear.

It was agreed that the Planning Committee should hold a workshop in which to discuss this, reviewing the priorities of going ahead with the IPOD II program in the terms we now understand it, knowing the costs involved and to assess this against continuing with the present mode of GLOMAR CHALLENGER drilling. They will also consider whether a hiatus in drilling would be desirable in order to catch up with the backlog of analyses of present core material and to allow time for advance planning. While scientifically a hiatus might be desirable, from the organizational standpoint there is a fear that if a hiatus occurred, through inertia, the JOIDES/IPOD organization would not recover.

There is no doubt that amongst the scientific community both within and outside JOIDES there is a great deal of demand to continue in the present mode of drilling for at least another few years. The projected life of GLOMAR CHALLENGER is 13 years which would extend up to 1981, and it is questioned how much longer beyond this time she would be cost effective. There are many unknowns in the new phase, the effectiveness of the riser and blow-out preventer system and its usefulness, the ability to drill to greater depths than have presently been achieved and the availability of new drilling environments. The safety factors for drilling into thick sediment sequences are unknown and need to be carefully assessed from comprehensive site survey data. The riser system, however, will only be 3.6 km long and this will still leave a number of deeper sites to be drilled which may have to be attempted without a riser.

The Passive Margin Panel recommends that the decision to work towards IPOD II should be delayed until the results of deep Jurassic drilling on Leg 51 are known and evaluated. In the meantime, they recommend that an extension of IPOD I be granted with the use of the longest drill string possible for use from GLOMAR CHALLENGER.

The Ocean Palaeoenvironment Panel look forward to using a riser to drill some sites that are presently inaccessible, for example to drill through the salt in the Mediterranean. Otherwise the current objectives of this panel can be achieved with the present system.

The Sedimentary Petrology Panel have as their first priority to continue in the current mode of drilling until the objectives within this category are exhausted. New emphasis could usefully be spent on improving the coring technique so that the percentage of sample retrieval could be increased.

This panel recommends that a hiatus in drilling occurs so that a proper analysis of the present DSDP/IPOD cores could be more thoroughly analyzed before continuing with the next phase of drilling.

This topic will be the subject of future discussions, to which drilling engineers will be invited. The responsibility is strongly felt that at this point in the program all aspects of the program should be carefully prioritized and given maximum consideration in order that the optimum benefit to all is achieved from the drilling program.

REPORT FROM THE EXECUTIVE COMMITTEE

The committee last met on 16-17 January 1976 in Miami.

Incorporation of U.S. JOIDES Membership

The role of JOIDES in the IPOD program has evolved in a way that now requires more formal recognition than it has had in the past. JOIDES has more than an advisory role, it plays its part as intellectual sponsor, as well as in conceptual planning and assessment. There is now a JOIDES Office and other specific agreements with non-U.S. institutions. It seems necessary now to formalize the role of JOIDES and the most effective means by which this can be achieved is considered to be by the incorporation of the U.S. members of JOIDES. The name of the corporation will probably be Joint Oceanographic Institutions (JOI) Incorporated. The existence of JOI Inc. will not create any changes or interruption in the details of the present JOIDES structure. Draft bylaws for the new corporation and a certificate of incorporation have been drawn up and it is hoped that these will be signed by each of the U.S. members within the next few months.

Drilling Plans

It is becoming increasingly clear that the four problem panels are adhering over-strictly to the categorized allocation of drilling time, and time is being reassigned by the panels from one area to another without consideration to leg programs. It was decided that the division of drilling time should no longer be regarded as formal allocations of time to particular panels, but that panels should principally propose sites and not legs. There is a need for more multidiscipline sites and legs. The planning of legs is the prerogative of the Planning Committee who should also be receptive to site suggestions from other than JOIDES panels and overcome panel parochialism by sponsoring poorly represented domains, e.g. the Caribbean.

Shipboard Staffing

Ratio of U.S. to non-U.S. co-chief scientists: There was some misunderstanding recently about the interpretation of NSF policy in this matter and whether NSF required that on average over several legs, that 50% of the co-chief scientists should be from the U.S., or whether the 50% rule applied specifically to each leg. NSF confirm that the latter is their policy and that only in exceptional circumstances would this be waived in future.

Responsibility for shipboard staffing: The preliminary selection will be made by DSDP and then submitted to the JOIDES Planning Committee for comments and discussions. DSDP being contractually responsible will name the final shipboard party.

REPORT FROM THE PLANNING COMMITTEE

The Committee met on 13-15 January 1976 in Miami.

Site Surveying

Some members of the Committee expressed concern over the inadequate detail of site surveying for sites 5 and 6. It is not entirely convincing that the drill sites are not located on minor fracture zones. It was agreed that it would be desirable for future site surveys for deep sites to be more detailed and, if possible, should include the use of narrow beam echo sounders and deep tow instrument packages.

Site Survey Management should also concern themselves with post drill site survey work, since it is equally important that this should be coordinated.

Site Survey Cores

The Sedimentary Petrology Panel recommend that piston cores are collected during site surveys. This would compensate for the usually missing top of the GLOMAR CHALLENGER core and should be taken unopened on board if possible and archived as an IPOD core.

Sampling and Publication Policy

A request from the Ocean Crust Panel to change the mode of sampling and publications for work on hard rocks has been received. The panel requests: 1. on-board production of the hard rock portion of the Initial Core Description (ICD). 2. That the cores be returned from GLOMAR CHALLENGER at the end of each leg, whether or not the core van was filled. 3. That more hard rock expertise is needed at the core repositories since IPOD would be producing a larger proportion of hard rock. 4. That publication restrictions now current until the Initial Report is completed should be lifted.

The Ocean Crust Panel were reminded that part of their panel mandate was to review sample requests and that the panel could request that certain non-shipboard scientists could be given samples for work on the Initial Report.

A small working group of the Planning Committee was set up to look into the sample distribution and publications policy and to suggest possible amendments to satisfy all concerned.

Data Banks

The Information Handling panel reported that at present the palaeontologic and lithologic data banks were available for use, but that few interrogations are received. This is possibly because nobody understands how to use the banks or to make requests to it. The proposal for the global data synthesis will shortly be reviewed, if this is funded then the data banks will be fully utilized.

Drilling Rate Record

It was agreed that this is a useful parameter to record and that these data should be more readily available. This is a difficult parameter to measure and DSDP have been asked to look into a better method of recording this so that the drill bits used can be correlated with lithology and thus improve drilling efficiency.

Metrification

There is increasing pressure for DSDP to use metric units in its publications. It was agreed that a gradual change should take place with the eventual view to adopting S.I. units.

ATLANTIC DRILLING PLANS

Moroccan Basin

Both the Passive Margin and Ocean Palaeoenvironment panels are interested in drilling this location where the oldest sediments in the North Atlantic may be sampled. After further perusal of multi-channel data it was realized that the earlier estimate of the depth to Jurassic basement of 2.5 km was unrealistic and that basement was closer to 8.5 km. Thus the original plan to drill this site during the first part of Leg 47 was now impractical. The panels jointly recommend that this site is delayed so that an entire leg can be spent on this objective. The Passive Margin Panel also recommended that if the same objectives could be achieved on the Blake Bahama Basin and if this could be fitted more logistically into the drilling program that this site be regarded as an alternative for the Moroccan Basin. As will be seen from the drilling schedule, the Planning Committee saw fit to include both these sites into the Atlantic drilling program. It is hoped that these deep sedimentary sites will provide useful data for the riser design, as well as demonstrate the feasibility of drilling deep sedimentary holes.

Norwegian Sea

The proposed drilling plans for the Norwegian Sea had been submitted by the ad hoc Norwegian Sea group. The Passive Margin and Palaeoenvironment Panels expressed interest in this plan. The Ocean Crust Panel stated that sites 9, 11 and 11a on the western flank of the Reykjanes Ridge were higher priority in their view and they requested 18 days of drilling in order to fit these sites into Leg 49. Despite the interest expressed by various parties in drilling the Norwegian Sea, there were serious problems of safety and of political permission to drill within Norwegian territorial waters. In view of these it was decided to delay the decision on this leg until after the meeting of the Safety Panel on 5 March and until a reply has been received from the Norwegian Authorities.

The Planning Committee agreed that if the Norwegian Sea sites are drilled during the 1976 Atlantic program, the Caribbean Sea leg should be postponed until the end of the program, thus allowing the Moroccan Basin site to be drilled during 1976. In the interests of the Pacific program, it was agreed that Leg 53 should continue to commence in Balboa and that the large amount of transit time for Leg 52 should be absorbed evenly between Legs 49-52.

Thus the current drilling program is as shown by the drilling schedule on page 2. The over-all objectives and locations of the sites are described in JOIDES JOURNAL 1975/3, with the exception of more recent additional information, which is described in this issue.

Procedure for Recommending Shipboard Scientists

DSDP maintains lists of potential shipboard scientists which, together with panel lists, has been the source in the past from which the scientific party has been chosen. The information contained in these lists is inadequate and it was decided to improve this system by adding an abbreviated curriculum vitae to the computer listing and that there should be no recognition of a name until the qualifications have been received.

DSDP will produce a one-page format and distribute these to the Planning Committee and panel chairmen upon which the qualifications, etc. of suggested shipboard participants should be completed.

The panel chairmen will be notified that the Planning Committee requires the names and particulars of recommended co-chief scientists as far ahead as possible. Once these are chosen, the co-chief scientists should work with David Moore and the Planning and Executive Committees to complete the shipboard party.

REPORT FROM THE OCEAN CRUST PANEL

The panel met in La Jolla on December 2-3 1975.

White Paper

A preliminary draft of the white paper outlining the objectives of the Ocean Crust Panel during IPOD I has been written by J. Cann. It was decided that the final document should be submitted to the Planning Committee with an appendix to show how each of the currently proposed and drilled sites fit the goals of the scientific program.

Sites 9, 11 and 11a

Recent surveying by German research vessels has shown that the sediment cover over the originally proposed sites on the eastern flank of the ridge 9, 11 and 11a is excessive. The panel therefore suggest that an ad hoc group consider the relocation of these sites along an isochron on the west side of the Mid-Atlantic Ridge at approximately 65°N 30°W, 64°N 31°W, and 63°N 32°W.

Sites 7 and 3

The Ocean Crust Panel concur with the Site Survey Panel that if site 7 is drilled that the hole should be located on the eastern magnetic anomaly on smooth oceanic basement. Its complementary site 3 should also be drilled on smooth basement.

Atlantic Plan Drilling Philosophy

The broad outline of the drilling objectives were outlined to be:

A 1. Investigation of variations of crustal properties in time and space
2. Special problems, e.g. evolution of hot spots with time
3. Investigation of ocean structures
4. Deep drilling

To implement these objectives, 5 overlapping programs can be outlined:

B 1. An E-W transect along a flow line
2. A N-S transect approximately along an isochron
3. Palaeo-hot spot investigation
4. Deep holes
5. Detailed suite of near axis holes to investigate ridge processes

The Atlantic drilling plan was then interrogated to see how it was satisfying these objectives:

1. East-West Transect: This transect will provide information on crustal variations with time, and also investigate local variability and test symmetry. The OCP strongly recommends that sites 6, 3 and 2a are drilled and at least two one-bit holes be drilled at sites 3 and 2a to test local variability. The panel also supports single bit holes at sites 2 and 7 if time permits (Fig. 1).

2. North-South Transect: This transect will provide information on the longitudinal variations in geochemistry and ridge processes along a mid-ocean ridge at sites 5 (= 395 and 395a), 6 (= 396 and 396b), 12, 13, 10, 9, 11 and 11a. Site 14 on the Vema Fracture Zone also

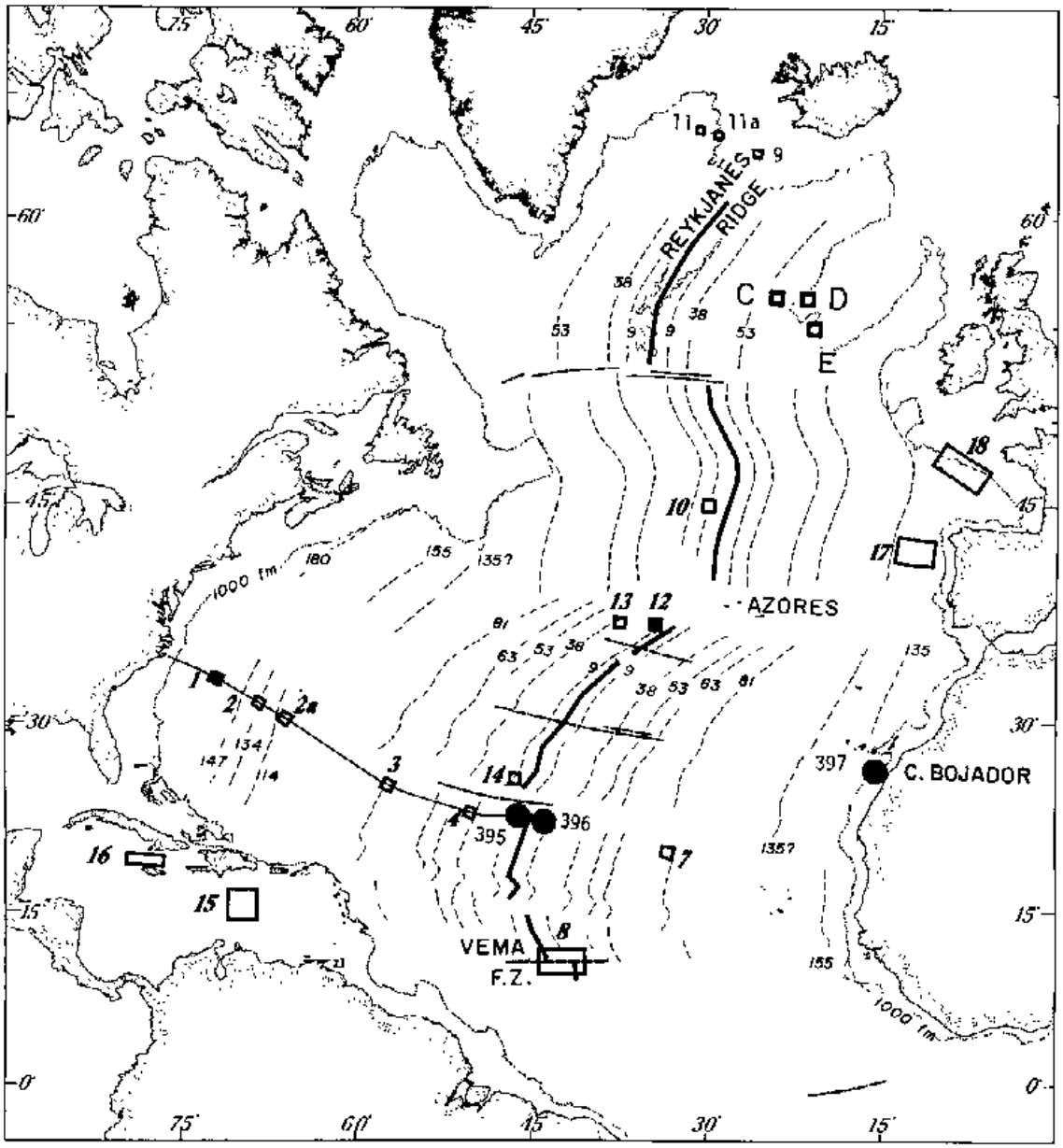
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Figure 1

fits into this program although it is considered to have lower priority.

3. Palaeo-hot Spot Investigations: Sites 9, 11 and 11a together with 13 and 12 have been chosen with this objective in mind.

4. Deep Holes for Crustal Structure: One of the major goals of the IPOD program is to understand the deep structure of the ocean crust and to relate the drilled rocks to the seismic and physical properties of the crust. Site 5 (= 395 and 395a) and site 12 relate to this program. Site 1 will also be a multiple re-entry and if possible sites 2 or 3 could be considered for deep penetration.

5. Crustal Processes: The emplacement of magmas, hydrothermal circulation, cooling at the intrusion axis and metamorphism are among the processes for study. To satisfy these goals a detailed suite of sites is needed close to the axis of intrusions. The OCP recommends that consideration be given to a zero age site in the FAMOUS area and if time is available to a 1 km scatter of 3 or 4 one-bit sites around sites 6 or 12. (These will also test for local variability.)

6. Other Programs: Programs for drilling in the Norwegian, Labrador and Caribbean Seas were considered but the panel considered that within the given time frame that the transect sites in the North Atlantic have higher priority. The OCP expressed support for the proposed site in the Venezuelan Basin (Passive Margin) but recommends that the remaining half of the Caribbean leg would be better used in Pacific drilling.

Geographic Plans

The OCP views with concern the way in which geographically oriented sites have entered the drilling program via ad hoc groups not having the formal support of the Ocean Crust Panel.

PACIFIC DRILLING

Leg 55

The plans for this leg include drilling at two sites on the Emperor Seamounts, at Suiko Seamount (re-entry) and on a small seamount near Terchi (single bit). Site K1 = P7 will also be a prime re-entry site on this leg, which will be situated on the pretrench rise on magnetic anomaly M-1 and close to the supposedly thin ocean crust in this area.

The four major objectives to be investigated by ocean crustal drilling in the Pacific were reiterated:

1. To compare the oceanic crustal structure at a fast spreading rate with that formed at a slow spreading rate
2. To study crustal processes at fast spreading ridges and to drill as close to the axis as possible.
3. To examine evidence for the hot spot hypothesis and the process by which seamounts are created.

4. To compare the crust in the marginal basins of the western Pacific with normal ocean crust.

1. East-West Transect: The basic purpose of this transect is to compare the faster spreading Pacific seafloor with the slow spreading Atlantic seafloor. The essential sites are P4 (Siqueiros Fracture Zone), P5, P6, P7 (= K1), P10 or SP1 (Fig. 2). The Siqueiros and SP1 sites are planned to be re-entry sites, though if no adequate sediment cover can be found within 10 m.y. of the ridge axis at the Siqueiros site the deep site may be changed to site P1 in the mouth of the Gulf of California.

2. Processes at Ridge Axes: The objective here is to drill zero age crust and to obtain unweathered samples for comparison with samples with older crust. The role of hydrothermal circulation will also be investigated. The order of priority of sites is, 1. Juan de Fuca Ridge, 2. Guaymas Basin in the Gulf of California, 3. near the Galapagos Ridge, and 4. on the Nazca Ridge.

3. Palaeo-hot Spot and Small Seamounts: During this program the structure and past position of the Hawaii-Emperor seamount chain in the Pacific will be examined. Two holes during Leg 55 are a minimum to satisfy this objective. More discussion will be given to the investigation of small seamounts, since those on younger thin crust may have a different chemistry to those formed on thicker, older crust.

4. Marginal Basins: The objectives for drilling in the Philippine Sea are shared with the Active Margin Panel. These were outlined in JOIDES JOURNAL 1975/3, page 20.

Drilling Directly into Hard Rock

The OCP enquired of DSDP engineers whether it would be possible to develop techniques for drilling into ocean crust with no sediment cover. The reply was that although this is not technically impossible, the risk of losing the whole drill string was sufficiently great that this would not be attempted.

Professional Curators

The panel strongly recommend that professional hard rock curators be employed at the core labs at DSDP and L-DGO who would be responsible for seeing that sampling of the hard rock portions of the cores was done optimally and without destroying valuable, unique information.

REPORT FROM THE PASSIVE MARGIN PANEL

The Passive Margin Panel met in Miami on 9-12 January 1976.

Moroccan Basin Site

It was originally intended to drill a deep hole to basement in the Moroccan Basin during Leg 47a. Since the original plans were made, however, JOIDES has had access to a GSI multi-channel line in this area, from which

it is apparent that basement lies at approximately 3.5 km and not 2.5 km as was originally estimated. The Passive Margin Panel feel that this is a very important site which warrants a full leg being spent on it. They therefore recommend that the Moroccan Basin is dropped from Leg 47a and that it should be drilled later on the Atlantic drilling program. Should this site not fit logistically into the drilling program, then the panel requests that a comparable site in the Blake Bahama Basin be chosen, where the deep Jurassic could be reached and which would also satisfy the Ocean Palaeoenvironment Panel aims.

As will be seen from the revised drilling schedule, the Planning Committee are agreeable that both these sites are inserted into the program.

At the recent Site Survey Panel and Safety Panel meetings, Hinz showed a new multi-channel line run by his group which runs parallel to the coast and 90 miles offshore through site 370 and crosses the GSI line in several places. A potential drill site was seen where the pre-Oxfordian is shallower than at site 370 and where Neogene has been eroded.

Gulf of California

In view of the forthcoming Gulf of California drilling, the Passive Margin Panel recommends that a Mexican scientist be invited to join the panel for discussions covering these sites.

Mediterranean-Caribbean Working Group

Interpanel Liaison

It is proposed that communications between the Passive Margin Panel and the Active Margin Panel be established via R. Blanchet and that a member of the Ocean Crust Panel be nominated for liaison from that panel with the Passive Margin members.

Caribbean Proposed Sites

Site Surveying

IFP-CNEXO (France) propose to do site surveys during April 1976 in the Caribbean.

Venezuela Basin

Two types of sites are envisaged: 1. South of site 150, where post B sediments are thin, and 2. to the east where a basement reflector seems to be better defined.

Grenada Trough

The area to be surveyed will probably be between 13°-14°N and 62°30'-63°15'W. There is also a possibility that some Shell data may be processed and available in this area.

Barbados Ridge

Three additional site survey profiles are required around a CEPM and a Shell line near 58°45'W. It was reported that the originally chosen site south of Barbados, after further examination of seismic and magnetic data, appears to be unsuitable.

Columbia Basin

The area still to be surveyed will be defined after evaluation of Bendix, Shell and University of Texas data. The Palaeoenvironmentalists are particularly interested in this site since it should reveal information on the communication between the Pacific and the Caribbean during the Mesozoic.

REPORT FROM THE OCEAN PALAEOENVIRONMENT PANEL

This panel met on 9-11 January 1976 in Miami.

Lithologic-Palaeontologic Atlas

An updated version of this mini-synthesis has been produced and distributed to all members of the panel and working group. It is recommended that drill site track maps and paleogeographic reconstructions accompany the atlas in its final form.

South Atlantic Working Group

This group met in Zurich on 18 December 1975, when drilling recommendations were made for Legs 66 and 67 with the primary objective of obtaining a better understanding of palaeoenvironments. The relationships between bottom stagnation, tectonics and climate and the evolution of environments, geothermal history in relation to organic matter, sediment diagenesis and the relationship between productivity and nutrient supply to coastal upwelling will be studied from deeper sites in marginal areas.

Shallow sites are required to study Tertiary problems of the initiation and evolution of Antarctic bottom circulation, the relationship of seafloor spreading to sedimentary environments and the timing and cause of changes in CCD levels in relation to the changing geography of the land masses, as well as the biological response to changes in the environment.

A primary objective will be to reach sediments synchronous and older than salt deposition in regions underlain by oceanic sediments.

Shipboard Staffing

The panel recommends that chief scientists be designated at least a year prior to their cruise, and that the shipboard party be constituted as soon after that as possible. Staffing lists should be submitted to the JOIDES Office for rapid dissemination to the panels. Since this plan is not feasible for legs 47-52, the panel has designated palaeoenvironment 'liaison' officers for these legs, whose responsibility it will be to suggest shipboard candidates, informally contact them about their possible

participation, recommend their names to the Planning Committee and assure adequate and timely core description upon completion of the leg. The Liaison Officers are:-

Leg 47 - I. Premoli Silva
Leg 48 - I. Premoli Silva
Leg 49 - H. J. Schrader
Leg 50 - W. R. Berggren
Leg 51 - B. E. Tucholke
Leg 52 - W. W. Hay

The selection of Liaison Officers for the Pacific legs will be the responsibility of the Planktonic Working Group.

Evolution of Plankton Communities - Working Group Meeting

This group met on 15-17 December 1975 at S.I.O. It was decided to focus attention on three aspects of the problem, the Neogene history of the present-day communities, the late Eocene-Oligocene when organisms of the open oceans underwent extensive extinction and subsequent radiation, and the early evolution of Jurassic Cretaceous planktonic groups.

1. Neogene Development of Modern Planktonic Communities

In order to understand this development it is necessary to sample each of the major Neogene communities and some of the principal zones of transition between them. Information will be sought from geographic variation within communities and their comparisons.

The sampling locations are:-

Central gyre - Hess Rise and Midpac mountain region
Transition between gyre and equator - need sequence at or near DSDP Site 313
Equatorial upwelling - sufficient sites in hand
Western boundary - need site near Pt. Conception
Transitional community at 40°N - need two pairs of sites, one north of Hess Rise and one near 40-43°N, 160°W
Eastern tropical equatorrial - need two sites in the Guatemala Basin

2. The Eocene-Oligocene Boundary

Faunal extinctions are characterized by decreased species diversity, simple morphology and perhaps cosmopolitan distributions of species. The subsequent radiations are characterized by increasing species diversity, complex morphologies and provincial distributions. Because community structure varies between water masses, it is proposed to sample contrasting palaeoenvironents analagous to the modern water masses through this time period, where mixing from adjacent communities has not taken place. The Eocene-Oligocene centers of the central gyre, equatorial upwelling, eastern tropical Pacific and boreal zones are primary targets.

3. Early Evolution of Jurassic-Cretaceous Pelagic Groups

At this period several major groups of pelagic micro-organisms were beginning their radiation into the oceanic regime. Calcareous nannoplankton, foraminifera, diatoms and silicoflagellates first appear and radiate within this interval and tintinnids, although first appearing in the early Palaeozoic, became abundant and diverse at this time. Thus there was a major change in the structure and evolution of pelagic sediments.

The Nauru Basin offers an opportunity to sample upper lower Jurassic seafloor, thought to have originated in the equatorial region of the western Pacific. These are ideal sediments with which to document this evolutionary development of many modern pelagic groups.

Proposed Sites

The combined objectives may be satisfied at the following sites:-

1. Southern Hess Rise near 34°N 178°50'E
2. Northern Hess Rise near 41°N 170°E
3. Western North Midpac mountains near 22°N 175°E
4. Gulf of Alaska on Eocene crust at least 50°N
5. Guatemala Basin near Mid America Trench sites
6. Near 160°W 43°N
7. Shikoku Basin area
8. Point Conception or Tanner Basin near 33°29'N, 120°10'W.

Mesozoic Palaeo-oceanography

Additional palaeoenvironmental objectives are to sample late Jurassic and early Cretaceous in deep oceanic sediments where the history of the CCD may be documented.

Other important objectives are to calibrate the magnetic anomaly and biostratigraphic time scales in the older part of the M sequence, the elucidation of the palaeolatitude of Late Jurassic-early Cretaceous crust, to explain the anomalous skewness of the magnetic anomalies, to obtain basement samples to investigate the palaeomagnetic amplitudes and for studies of geochemical weathering with age.

Three sites have been outliend for these objectives:-

1. Nauru Basin near 165°E 6°30'N just north of magnetic anomaly M-25
2. Nauru Basin near 2°N, 168°E on anomaly M-18
3. Mariana Basin near 9°N 159°E

Deep Jurassic Site

At a joint session of the Ocean Palaeoenvironment and Passive Margin Panels, it was strongly recommended that deep Jurassic holes be drilled in either the Moroccan or Blake Bahama Basin.

Inter-Panel Liaison

It is difficult at times to keep abreast of the activites of other panels and thus the Ocean Palaeoenvironment Panel has designated liaison officers who are:-

Tj. H. Van Andel - to Ocean Crust Panel
Y. Lancelot - to Active Margin Panel
H. Bolli, W. Riedel or W. Berggren - to Ocean Palaeoenvironment from the Stratigraphic Correlation Panel
J. Thiede - to Ocean Palaeoenvironment from Passive Margin Panel

The Ocean Palaeoenvironment Panel advise these designees to attend the relevant meetings whenever possible.

Fossil Lists

Provisional lists of important diatom species and silicoflagellates have been compiled. Thus all major plankton fossil groups, planktonic foraminifera, calcareous nannoplankton, radiolaria, diatoms, silicoflagellates, have now been completed. These lists will be made available to all shipboard palaeontologists.

Panel Re-Organization

The panel recommends a reduction of yearly meetings from 3 to 2 and that more smaller meetings of working groups should take place. This should ease the load on the travel funds, as well as create more effective working meetings.

REPORT FROM THE SITE SURVEY PANEL

The Site Survey Panel met at L-DGO on 18-19 February 1976.

Future Relationships between Site Survey Management, DSDP, NSF and JOIDES

A memorandum from Marcus Langseth points out the need for a major reorganization of the site survey program. The need for this is several-fold:-

1. The holes to be drilled in the latter part of IPOD I and during IPOD II will be deep sites and will require a larger amount of site survey time and funds. Multi-channel seismic reflection with special processing and sophisticated refraction experiments will be required, and it is difficult to see how such a broad and expensive program can be carried out within the present framework of Site Survey Management. An effective program will require maximum cooperation between countries and institutions and, within the United States joint funding by more than one agency.

2. The present organization presents a conflict of interest since SSM is situated at L-DGO, one of the principal contributors to site surveying.

3. The present method of contract handling has a three tier level of management, at DSDP and SSM and with the institution under contract to do the work. This has led to a cumbersome communications problem.

4. Isolation of the site survey funds from drilling operations funds would also protect them from erosion during periods when help to cover increases in costs in the operations program is needed.

Recommendations made are that funding for U.S. site surveying should be made directly from NSF and not via DSDP, and that the problem definition and site survey requirements be specified by the Site Survey Panel, who would act as a steering committee to advise NSF and funding agencies in other countries.

L-DGO would organize an annual site survey proposal working with the Site Survey Panel and incorporating proposals from individual scientists. Thus NSF would receive only one proposal per year through which all survey work could be integrated. L-DGO would continue to provide scientific and fiscal management for the integrated program, operate a data bank and furnish other necessary services essential to a successful program.

The Site Survey Panel are in agreement with the principle that a restructuring should be further explored. A meeting will be arranged between NSF, DSDP, and JOIDES to discuss a method by which such a restructuring could be implemented.

SITE SURVEY PLANS FOR 1976

Site	Institution	Ship	Days of Ship Time	Main Objectives
9,11,11a	B.G.R.	METEOR	24	Magnetics, gravity and seismic refraction across sites which are now on the west flank of the Reykjanes Ridge
12, 13	Univ. Miami	COLUMBUS ISELIN	30	detailed magnetics and gravity
	Bedford Inst.	BAFFIN		OBS refraction and sonobuoy
	Texas A&M			OBS refraction and sonobuoy
PAC 4	S.I.O.	THOMAS WASHINGTON	30	Seismic profiling and OBS reflection
	L-DGO	CONRAD	15	700 nm of multi-channel profiling with magnetics, gravity & OBS seismics

Site	Institution	Ship	Days of Ship Time	Main Objectives
PAC 5	L-DGO	CONRAD	15	Tracks to relate sites 5 & 6
PAC 6	Hawaii	KANA KEOKI	20	Magnetics, gravity & OBS refraction
PAC 14	Hawaii	KANA KEOKI	25	OBS refraction at sites SP1-4 and 10 days magnetics & gravity
	L-DGO	CONRAD	30	1200 nm multi-channel profiles across the South Philippine Sea traverse with magnetics and gravity
	S.I.O.	THOMAS WASHINGTON	11	2 ship refraction over sites SP4-8 in the Philippine Arc
Carib.	IFP & C.N.E.X.O.	FLORENCE		Multi-channel seismics over Venezuela Basin
Sea of Okhotsk PAC 7	USSR	MENDELEYEV		Magnetics, gravity and seismic refraction
Bonnin Arc	Japan			Multi-channel lines across the arc
PAC 3	USGS	LEE		It may be possible to run a multi-channel line along the Juan de Fuca ridge axis

There is a need for site surveying on Suiko Seamount in the Emperor Chain. USGS have a ship able to work there this summer, but there are difficulties in using NSF funds for a USGS ship. The chairman of the Site Survey Panel was asked to plead with the authorities to allow this.

Sites* A) Pacific	Estimated Ship Days	Types of Data Required
Middle America Trench (Leg 64)	45	Surveys of Mexican & Guatemalan sites: Multi-channel, OBS, and detailed MG&G with emphasis on heat flow data in areas where safety is a prime consideration.
So.Philippine Transect (Legs 57 and 59?)	30	Additional surveys at final sites selected on transect after 1976 surveys. Emphasis on areas where safety requirements are high and preliminary (1976) surveys indicate the need for detailed work.
Nauru Basin & Ontong-Java Plateau (Leg 59)	45	Detailed surveys including MG&G and OBS required at these sites.
Cretaceous Quiet Zone (Leg 60)	20	OBS and detailed MG&G at palaeoenvironment sites north of Hawaii
Subtotal	140	

Alternate sites at which surveying may be required in 1977 depending on decisions of various JOIDES advisory panels. These sites would infringe on time required at the scheduled sites listed above.

Tonga Fiji Trench	20	Multi-channel transect across suite of proposed sites.
South China Sea	30	Multi-channel line extending South Philippine Sea traverse and leg across Sulu-Celebes Sea. OBS at proposed sites. (Now scheduled for IPOD II.)

B) Atlantic

In addition to the above sites in the Pacific, there are several sites in the Atlantic that will be drilled during 1976 and for which no OBS refraction data are available. Such data may be critical to interpretation of the drill results. Reservation of at least 30 days of ship time would cover a portion of this anticipated need.

Total ship time required:	140 days in the Pacific
	30 days in the Atlantic
GRAND TOTAL	170 days

* See Figure 2 for approximate locations.

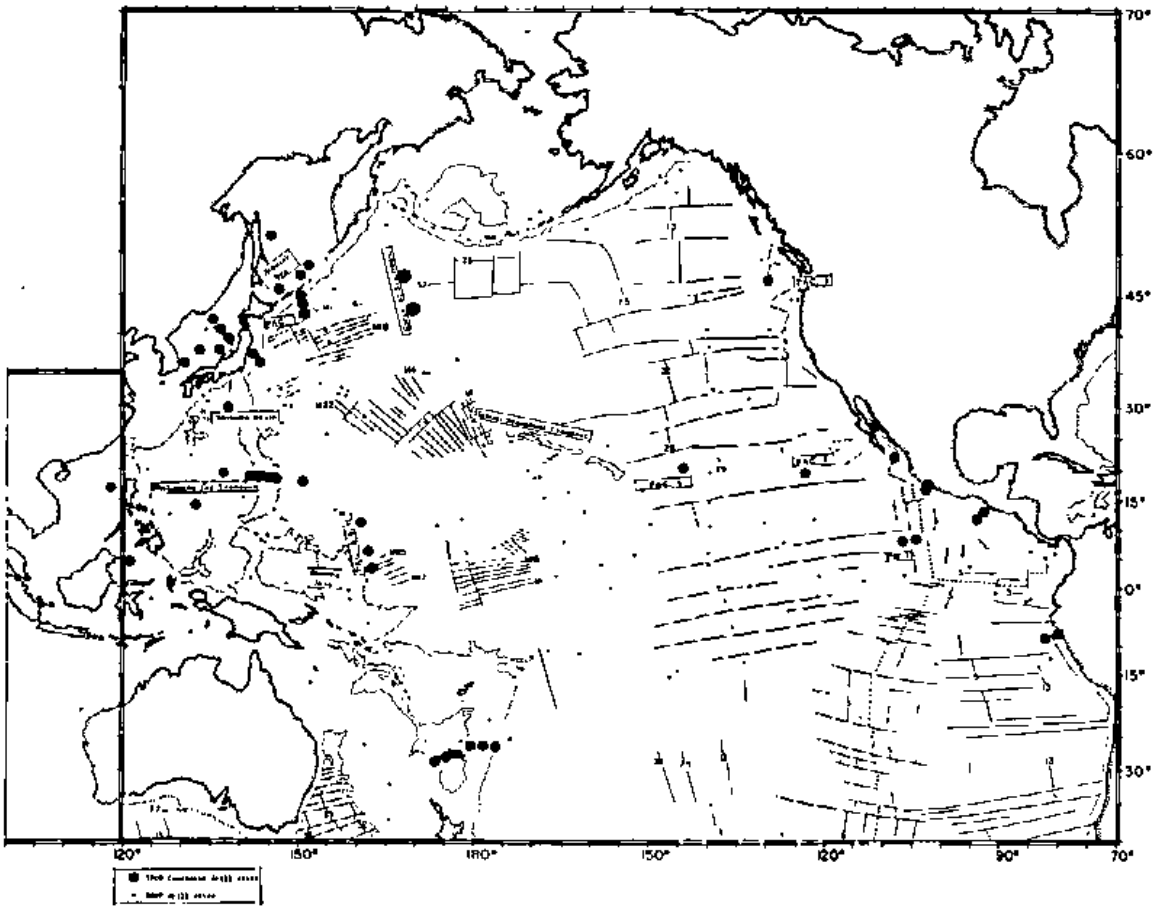


Figure 2

Points raised during the discussion on the 1977 plans were:-

Philippine transect: Work should be concentrated on the arc-trench gap and on some of the complex "third arc" ridges, which are the least well known. There should probably be a concentrated effort on dredging to define geologic structures.

Kuriles: No new survey work is planned for this transect in 1977 and GLOMAR CHALLENGER is scheduled to be there in August 1977.

Bonnin Arc: Close contact should be maintained with the Japanese groups to ensure that detailed follow-up surveys are made after the reconnaissance work now in progress.

Middle America Trench: Site Survey Management are asked to contact EXXON to learn whether we may be allowed to study their multi-channel and drill data off Guatemala.

Cretaecous Quiet Zone: More guidance is needed from the Ocean Crust Panel on the objectives of sites in this category.

Ad hoc Pacific Working Group

The Site Survey Panel appointed a small working group to meet with the Active Margin Panel on 5-7 April 1976 at DSDP to help more closely define site survey requirements in the Western Pacific, (transects across the Philippine Sea, Kuriles, Shikoku Basin, New Hebrides.) The working group consists of Von Huene, Kosminskaya, Langseth, Lewis and Winterer.

Processing the Digicon Line in the Atlantic

The panel formulated a set of priorities designed to focus on the scientific problems of greatest interest to IPOD. The following scheme was adopted:-

Priority 1: 36 fold processing to Site 2a, depth section to Site 2a, dip migration between shot points 800-1200 (around 2a) and to follow the deep basement reflectors into the continental slope.

Priority 2: Continuous velocity every km between shot points 300-1200, and special processing between shot points 300-1200 (= sites 2-2a).

The total cost of this is estimated at $50.9K. The Panel agreed that the Digicon Line should be published as soon as possible with as wide an international circulation as could be achieved.

REPORT FROM THE ORGANIC GEOCHEMISTRY PANEL

An ad hoc meeting of this panel was held in La Jolla on 18 December 1975.

This meeting was called to review the past and future roles of organic geochemistry in ocean drilling.

It was agreed that the study of DSDP samples has provided information on diagenetic (Catagenic) reactions and new information on palaeo time-temperature history of sediments. Organic carbon studies have yielded some interesting data and in future this kind of information should be tied to plate tectonic knowledge. It was suggested that the following topics should be looked into:-

1. Geochemical mapping of provinces on slope and abyssal areas.
2. Pyrolysis-fluorescence to understand the role of coaly material and the cycling of organic material in the oceans.
3. Increased study of gases with particular emphasis on hydrates in near surface sediments.
4. Isotopic measurements of gases as a tool for identifying source material and in following the effects of migration.

There is a need for more modern gas chromatograph on board, for use particularly within the C_1 to C_5 range. The Carle gas chromatograph utilizing a thermal conductivity detector is still on board, and has been augmented by a dual column instrument utilizing flame ionization detectors with a Hewlett Packard data analyzer which will be on board and functional from Leg 47 onwards.

Porphyrins were also described as useful in detecting the various chemical reaction sequences in sediments. They can be used to record thermal stresses in sediments and can be applied in sediments where mixing of material of various ages has taken place.

DSDP material has provided an invaluable complement to oil industry research in that samples have been supplied so that organic geochemical processes can be studied from their depositional environments to their biological or thermal destruction. Organic geochemistry studies can also be used to understand geological problems such as the lateral extent of black shale deposits.

There is need for an integrated organic geochemistry program oriented towards topics such as palaeoenvironments, diagenetic history, thermal history, source beds of petroleum, safety in drilling and aspects of the carbon cycle. Organic geochemical studies can also provide IPOD with information on sediment temperature history in low temperature regions, and inputs of land and marine derived sediment sources.

Some short term actions to help integrate organic geochemistry more fully into IPOD activities could be to discuss palaeoenvironments and the role of geochemistry, 2. greater dovetailing of information from other disciplines, 3. study the proposed holes for greater organic geochemical input, 4. that samples be homogenized for comparative work, and 5. panel meetings be restructured to include a report on a cruise, sampling party and report on the scientific studies performed thus far.

Some long term suggestions are:- 1. problems of organic geochemistry should be directed to the problems of origin and evolution of the South Atlantic Basin. 2. Sites with thick sequences of sediments with uniform temperature gradient where temperature was the dominant influence on chemical reactions should be intensively studied. 3. Study of problems of primary migration. 4. Study of gas clathrates, naptha range and higher hydrocarbons and considerations of fluxes in the carbon cycle.

Sampling

The panel urged that future sampling density for organic geochemical samples be increased from 20 cm for every 50 meters of core to one sixth of a core every two cores.

For purposes of curation, a minimum of one eighth of each core-section-interval should be maintained frozen for five years after the initial sampling. When the five years are up the samples will be returned to general storage.

Pressure Core Barrel

The panel was assured that the engineering improvement on the core barrel design is still being pursued.

Organic Geochemistry Panel Responsibilities

An initial list was made of panel studies:-

1. Assessment of organic carbon, carbonate carbon, kerogen and lipid content of sediments. Comparison of the carbon isotopic composition of kerogen and associated lipids (Erdman).

2. Determination of molecular composition of gases and evaluation of the C_{15} and alkanes. Determination of carbon isotopic composition of hydrocarbons (McIver).

3. Evaluation of petroleum-generating potential of sediments and their thermal history through pyrolysis and optical methods (Hood).

4. Contributions of organic materials from marine and terrestrial sources through molecular analyses (Simoneit).

5. Evaluation of potential generation of petroleum through source rock analysis (Dow and Claypool).

6. C_4-C_7 hydrocarbons and their role in early diagenesis (Hunt).

7. Reaction of tetrapyrrole pigments as a guide to geochemical reactions and thermal history (Baker).

8. Detailed molecular investigations of biolipids and geolipids to ascertain chemical processes, microbiological contributions, thermal history and palaeoenvironment (Eglinton).

9. High molecular weight hydrocarbons, especially triterpanes as indicators of petroleum generation potential (Welte).

10. Nature of kerogen and humic acids to predict sources of organic material, depositional environment, early and late diagenesis and thermal history (Tissot).

REPORT FROM THE SEDIMENTARY PETROLOGY AND PHYSICAL PROPERTIES PANEL

This panel met on 9-10 January 1976 in Miami

Panel Membership

Drs. Berger, Bernoulli and Conolly have joined the panel and Drs. Hamilton, Schneiderman, Van Andel and Whetten have retired.

Shipboard Staffing

The panel is anxious to expedite scientific staffing and to make this known to the panel as soon as possible so that the panel may then liaison with the shipboard sedimentologists on matters of interest to the panel. Liaison members for Legs 46, 47 and 48 will be S. Calvert, J. Conolly and S. Calvert respectively.

Logging

The panel are anxious to have a sediment logging program implemented as soon as possible.

Sedimentological/Geotechnical Analyses of IPOD Cores

The list of analyses in JOIDES JOURNAL 1975/3 was scrutinized and those analyses considered mandatory are listed below:-

Visual description
Smear slide description
X-ray mineralogy
GRAPE
Bulk density/GRAPE/Acoustic velocity
Water content
Vane shear
Atterberg limits
Fluorescence
Gas Chromatography
Bomb Carbonate
Carbon carbonate
Grain size
Pore water collection

The remaining lithologic analyses in JOIDES JOURNAL are either time consuming or require special expertise and whilst the panel supports such programs, they should be optional.

Surface Sediments

The panel is concerned at the poor condition of the surface sediments recovered by GLOMAR CHALLENGER. They recommend that a piston core be collected during site surveyings and transferred unopened to GLOMAR CHALLENGER, if practicable, or otherwise sent to DSDP and curated as a normal IPOD core.

X-ray Diffraction Analyses

A proposal was presented for undertaking XRD analysis on approximately 50 samples per leg. An internal standard as well as close supervision of the quality of analysis would prevent a repeat of the demise of the previous XRD program. A major element analyses could possibly also be done on the same samples at no extra cost. The panel strongly supports this proposal, but opposes the installation of XRD equipment on board since on many legs there will be no one to run this instrument.

Sedimentary Structures

The panel are preparing a set of symbols to be used in the columns with the core descriptions and barrel summaries to indicate the basic nature and distribution of sedimentary structures. A working manual is being prepared.

Review of Initial Report Chapters

The Sedimentary Petrology Panel members indicate their willingness to review syntheses chapters on sedimentological and geotechnical subjects submitted to the Initial Reports.

Technical Manual on DSDP Methods

A reference volume is being prepared under the supervision of the panel. It will summarize the methodology used in DSDP analyses. Each chapter will review a technique and the changes used through Legs 1-44 and will assess the quality of the published data and will indicate where the raw data can be obtained. The first drafts of this manual should be received in approximately 6-8 months.

REPORT FROM THE INFORMATION HANDLING PANEL

This panel met in La Jolla on 9-10 February 1976.

Shipboard Computing

A subcommittee (Jim Kelley, Chairman) will look into the question raised by the Active Margin Panel concerning the processing of digital data at sea. A recommendation is expected in six months.

Corrections of Errors in Initial Reports

The Information Handling Group recommend the issue of a simple publication calling attention to errors which have been uncovered in the Initial Reports. Authors of articles will be requested to submit corrections.

Quality of Papers in Initial Reports

There was a long discussion about, and some strong criticism of, the quality of some of the papers. We recommended that the DSDP-IPOD editors send a letter to each author requesting that his paper be reviewed by colleagues before it is submitted and that evidence of this reviewing process be sent to the editor.

Standard Terminology

This Panel will write to the Ocean Crust Panel advising them of their responsibility for defining certain standard terminology which will allow the Information Handling Group to begin development of the data base.

Paleo Data Base

A subcommittee (Tom Worsley, Chairman) will propose a plan, suggest a location for the work and estimate the cost for putting the paleo data base into computer-compatible form. A recommendation is expected in six months.

Literature Indexing

We endorsed the indexing procedure recently developed and now in use at DSDP-IPOD.

International Exchange of Data and Information

There was considerable discussion about the effectiveness of data interchange (particularly site survey data) and about how well foreign scientists are being briefed on IPOD activities. There will be some recommendations proposed by this Panel in its minutes. One simple proposal was that JOIDES JOURNAL be translated into the languages of the countries participating in IPOD.

REPORT FROM THE DOWNHOLE MEASUREMENTS PANEL

The panel met on 12 January 1976 in Miami.

The logging plans for Leg 46 were discussed. A summary of the results of this leg can be found on page 30.

Hydrofracturing

The possibility of a hydrofracturing experiment has been suggested to the panel in order to test the state of stress in the basement. The panel is interested to hear of experiments of this nature but are awaiting more information to learn whether this experiment could be carried out on GLOMAR CHALLENGER and what instrumentation is involved.

Possible Logging Programs for Legs 47, 48 and 49

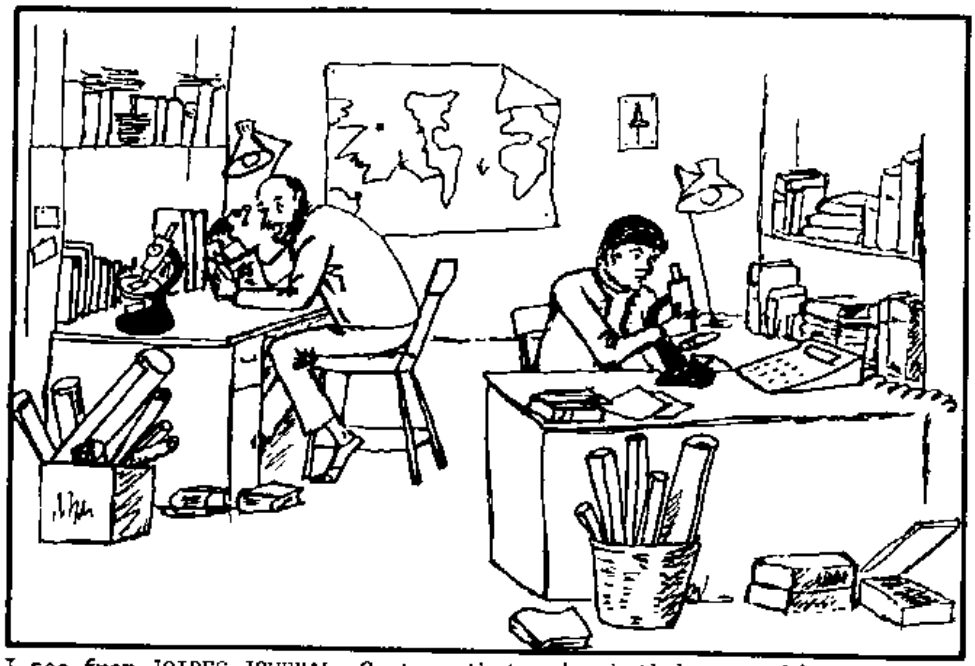
Although the Passive Margin and Safety Panels have expressed a desire for logging it is not clear that either ship time, funds or equipment will be available. There is a possibility of British support for a logging program for Leg 48, and the USSR have offered the loan of equipment and personnel for one leg of drilling. It is not sure yet whether this can be arranged in time for Leg 49.

Outlook for Routine Logging Program

The Planning Committee will be asked to consider who will be in charge of fund raising for the future. The possibility of obtaining a low cost logging computer will be looked into.

ACTIVE MARGIN PANEL

This Panel has not met since their last meeting summarized in JOIDES JOURNAL 1975/3. The next meeting of this panel will be held on 5-7 April 1976 in La Jolla.



I see from JOIDES JOURNAL, Gustav, that we've both been working on West Pacific Lower Eocene nannos for the last ten years.

DEEP SEA DRILLING PROJECT DATA NOW AVAILABLE

The Deep Sea Drilling Project offers to the world scientific community a wide range of services on geological and geophysical information that has been collected by the Project since 1968. This information includes lithologic samples, computerized and microfilmed data, and publications. Requests for these services are encouraged and welcomed; please direct your inquiries to:

John L. Usher
Deep Sea Drilling Project, A-031
Scripps Institution of Oceanography
P. O. Box 1529
La Jolla, Ca 92093

Lithologic Samples

Rock and sediment samples are available for distribution twelve months following completion of a GLOMAR CHALLENGER cruise leg. They are curated and stored (Pacific and Indian Ocean cores) at Scripps Institution of Oceanography, and (Atlantic and Antarctic cores) at the East Coast Repository at Lamont-Doherty Geological Observatory.

Data Information

TYPE OF DATA AVAILABLE	PRESENT MODE
DSDP Prime Data:	
Carbon Carbonate	Tapes
Core Barrel Inventory	Tapes
Core Log	Hard Copy
Core Section Weight/Bulk Density	Hard Copy
Grain Size	Tapes
GRAPE*	Tapes
Interstitial Water	Hard Copy
Paleontology/Biostratigraphy	Hard Copy
Sampling Records	Tapes
Smear Slide Descriptions	IBM Cards
Sonic Velocity	IBM Cards
Visual Core Descriptions	IBM Cards
Water Content	IBM Cards
DSDP Underway Data:	
Geophysical Log	Hard Copy
Magnetometer	IBM Cards
P D R Records	Microfilm

*Gamma Ray Attenuation Porosity Evaluator

DSDP Underway Data (Continued)

Type	Mode
Profiler EDO #1	Microfilm
Profiler EDO #2	Microfilm

These data, with few exceptions, are presently available for Legs 1 through 44.

DSDP Publications - (An updated version of the list in JOIDES JOURNAL 1975/2)

1. INITIAL REPORTS OF THE DEEP SEA DRILLING PROJECT: (Turquoise covers). This is the major published account of each leg, with the results and analyses of the holes together with regional syntheses and other more general related topics. This generally appears approximately 18 months after the end of the leg. The volumes are available from the Government Printing Office in Washington. The last volume to appear is Leg 33 (catalog number NS 1.2:D 36/2/Vol 33) costing $20.00. Shortly to appear is Volume 30 (catalog number NS 1.2:D 36/2/Vol 30) which costs $15.95 (plus 25% for foreign postage and handling). DSDP distribute 3,000 copies. The details and costs of the other volumes appeared in JOIDES JOURNAL 1975/3.

2. PRELIMINARY REPORTS: (Brown Cover). A brief synopsis of a given leg, written on board the ship and available a few weeks after the end of the cruise. It is regularly distributed to scientific institutions and individuals.

3. OPERATIONS RESUME: A full account of the technical details of drilling operations, statistics, problems and instrumentation prepared at the end of the leg, together with the descriptions of each hole, tabulated data and a map.

4. INITIAL CORE DESCRIPTIONS: (Green Cover). An information report on cores, site data and site synopsis. The distribution is 500 copies for libraries only and not available to individuals other than those on the leg. The next ICD to appear will be Leg 42.

5. DATA DATA: A series of bulletins irregularly issued by the Information Handling Panel. They advertise capabilities and available services of the group.

6. GUIDES TO CORE MATERIAL: (Yellow Cover). A series of guides summarizing by computer the data on the sedimentology, geochemistry and micropaleontology of cores extracted from the "Initial Reports." These are prepared in conjunction with the notes on Data Data.

7. GUIDE TO PUBLICATIONS AND SUBSEQUENT INVESTIGATIONS: This is a computer generated list of information on investigations using DSDP material other than for the Initial Reports.

8. KEYWORD INDEX TO INITIAL REPORTS: This is replacing the SAMSTAT list and will be available in a month or so.

Other Publications

GEOTIMES ARTICLE: This journal is used for the first publication of the results of each leg. The format is somewhat similar to the shipboard summary and typically this article appears several months after the end of the leg.

JOIDES Publications

JOIDES is very anxious not to be a closed society within the scientific community. To this aim a number of publications have been prepared outlining the plans, objectives, etc. of the program and soliciting suggestions from outside the panels. To date the following articles have appeared:

International Phase of Ocean Drilling - W.G. Melson, GEOTIMES, 6/75, p. 25.

Drill Sites Proposed for International Phase - P.D. Rabinowitz and W.J. Ludwig, GEOTIMES 10/75, p. 21-23.

Active Margin Drilling - S. Uyeda, GEOTIMES, 11/75, p. 19.

Scientific Plans for Deep Sea Drilling - C.A. Williams, NATURE, 1976, 259, p. 83-86.

Passive Ocean Margins - J.R. Curray, GEOTIMES, February 1976, p. 26-27.

LEG 45

Drs. W. Melson and P. Rabinowitz report:-

D/V GLOMAR CHALLENGER departed from San Juan on 30 November 1975 and completed the voyage 52 days later, reaching San Juan on 20 January 1976. Three holes were drilled in sites previously surveyed by R/V ATLANTIS II (WHOI), R/V KANA KEOKI (HIG) and R/V ACADEMIC KURCHATOV (USSR).

This inaugural leg for IPOD was also the first time that the operation of setting a maxi re-entry cone with casing to basement was ever accomplished on the deep sea floor.

Site 395 Lat 22°45.35'N, 46°4.90'W Water Depth 4482 m

This hole is located on IPOD Site 5 on the eastern edge of north pond within magnetic anomaly 4. The site was carefully chosen so as to avoid fracture zones. 89 meters of Neogene foraminiferal nannofossil ooze was penetrated, then 4 meters of calcareous brown manganese-micronodule bearing clay. The basalt-sediment contact was not recovered in an undisturbed form. The lowermost sediments are tentatively dated as Upper Miocene in close agreement with the age of anomaly 4. Basalt and serpentinite sand and cobbles were frequently encountered in the sediment.

95 meters were drilled into basement with 22 per cent recovery (10.8% without drill cuttings). 57 meters of aphyric basalt pillow lava were penetrated before encountering gabbro-serpentinized-peridotite. The contact with the overlying pillow lavas was not recovered. The peridotite is 20-40% serpentinized and preserves many primary minerals including olivine, but no plagioclase. It is the freshest so far recovered from the Atlantic and includes 1.4 meters of tectonized harzburgite with large, elongate enstatite augen inclined 40° to the vertical. The tectonic foliation predates serpentinization. Below this is a carbonate-cemented serpentine breccia zone with a probable dike of plagioclase-olivine-phyric basalt in the middle and traces of microfossils preserved in the carbonate. Below was 1 meter of non-foliated serpentinized lherzolite, separated by another carbonate-cemented breccia zone from massive plagioclase-olivine-phyric basalt in which the hole terminated.

The basalt is fresh to moderately altered with a K_2O content of 0.09-0.30% and TiO_2 of 1.0-1.7%. The four types analyzed are not readily related to shallow crystal fractionation or accumulation:- 1. high Ca-Al aphyric basalt, 2. lower Ca-Al aphyric basalt, 3. plagioclase-olivine-clinopyroxene-phyric basalt, 4. plagioclase olivine phyric basalt. Types 3 and 4 were exclusively found in gabbro-ultramafic complex.

The uppermost aphyric basalt is normally polarized with a mean inclination of 24°, decreasing slightly with depth. The basalt in the plutonic complex is normally polarized with a mean inclination of 8°. The average intensity of magnetization is .003 emu c^{-3}. The peridotite shows no stable remanence.

Based on these results it was decided to place the very deep hole at site 5 with the objectives of evaluating crustal velocity, to find the rocks producing the regional magnetic field, to ascertain their mode of emplacement and to evaluate the basalt-gabbro-peridotite magnetic relationships and to reach layer 3 at shallow depths.

Site 395a

This site is located close to site 395 at 22°45.35'N, 46°4.90'W in 4485 m of water, and is also within magnetic anomaly 4.

A total of 576 meters of igneous basement and 93 m of sediment were penetrated and the hole was re-entered nine times.

Seven chemically different basalt types were encountered, each consisting of thin flows and pillow sequences ranging in thickness from 30 to 250 m. All have low Mg, Ni and Cr and relatively high TiO_2, and Sr typical of ocean tholeiites. The seven series belong to at least three unrelated near-surface fractionation series.

The magnetic properties perhaps produced the greatest surprise since 3 magnetic reversals were encountered. The top 150 m below igneous basement being positively magnetized with an inclination of +40°, below is 330 m of reversely magnetized material, followed by 40 m of normally magnetized pillow basalt with an inclination of +55°. Underlying this is a 30 m reversely magnetized section of dolertie with an inclination of -38° and the final unit which is reversely magnetized with an inclination of

-40°. The average intensity of magnetization is very uniform around .005 emu c^{-3} and no systematic variation in intensity is observed with lithology. The data are consistent with the concept that many relatively short field reversals can occur within the time span of one broad magnetic anomaly.

The hole terminated just beyond a rubble layer, which created drilling difficulties. A similar phenomena had been encountered at site 334 in the FAMOUS area. The extent to which rubble layers exist is something we shall learn from this crustal drilling program.

Site 396

Location 22°58.88'N, 43°30.95'W in 4460 m of water

This hole is located in IPOD Atlantic site 6 on the eastern side of the Mid-Atlantic Ridge crest on magnetic anomaly 5 at the western edge of a sediment pond, and is symmetrically opposed to site 395 on the other side of the ridge.

222 m subbottom were continuously cored. Below 125 m of Upper Miocene sediments 96 m of phyric pillow basalts were encountered with some soft sediment interbeds. One of these interbeds is over 9 m thick at a depth of around 178 m. Chemically the basalts divide into 5 phyric sequences based primarily on Sr abundance. Three magnetic reversals were encountered, suggesting that this is a magnetic transition zone. The intensity value is $1.53 \pm 0.15 \times 10^{-3}$ emu c^{-3}, less than half the value obtained at Hole 395a.

Leg 46

Co-chief scientists J.R. Heirtzler and L. Dmitriev report:-

Leg 46 began in San Juan on 28 January 1976 after repairs to the thrusters and heave compensator, and it was planned to build upon the successes of leg 45 by drilling a deep hole close to 396 to measure heat flow and log that hole, to drill another shallow hole nearby and then to return to hole 395a to log it and to do a downhole seismic experiment involving a rendezvous with R/V KNORR, who would shoot the explosives. After this it was planned to drill another shallow hole at site 6 before leaving for port. In actuality the deep hole 396b reached only 405.5 m before drilling was stopped due to bad hole conditions.

In running in the pipe for the next shallow hole, a structural problem with the derrick occurred, causing damage in the drill guide. The drill string was fortunately recovered, but the remainder of the program had to be abandoned and GLOMAR CHALLENGER returned to port in Las Palmas on 10 March after 42 days at sea.

Site 396b

Site location 22°59.14'N, 43°30.90'W, water depth 4465, 130 km east of the axis of the Mid-Atlantic Ridge.

A total penetration of 405.5 m was reached after 23.0 days of drilling. 150.5 m of sediment overlying 255 m of tholeiitic basalt with low MgO and high TiO_2 and FeO. Eight lithologic units were identified. Units 1, 2 and 3 are primarily sparsely olivine and plagioclase phyric basalt. Units 1 and 2 are pillow sequences with lithified nannofossil ooze and cemented palagonite breccias in their upper parts. 20 cm of limestone separate units 1 and 2. Unit 3 is a flow or sill 8.5 m thick. Unit 4 is a pillow sequence composed of porphyritic basalt with 15-25% olivine and plagioclase phenocrysts. Unit 5 is composed of sparsely olivine and plagioclase phyric basalt pillows and carbonate cemented breccia. Unit 6 is primarily basaltic gravel or sand and sparsely phyric basalt pillows. Both Units 5 and 6 had poor recovery. Unit 7 is moderately olivine and plagioclase phyric basalt pillow sequences. Unit 8 is basaltic gravel or sand. The magnetic properties are non-uniform with inclinations of +18°, -35°, -67°, +55°, -7° and +31° with intensities of magnetization varying between 1.03 to 3.45 x 10^{-3} emu c^{-3}.

A unique aspect of Leg 46 was the ability to downhole log density, porosity, sonic velocity, natural gamma-ray activity and electrical conductivity. This service was provided by Schlumberger Well Services. Four logging runs were made outside the pipe from the foot of the casing to 380 m subbottom, taking a total of 34 hours ship time. The logs show correlations with all properties of the recovered samples in particular the unique zone of coarse basaltic sand 310 m below subbasement. A satisfactory correlation was noticed between the zones of maximum alteration and the logging and particularly with porosity, density and sound velocity.

Leg 46 - Shipboard Scientific Party

L. Dmitriev - USSR
J. R. Heirtzler - WHOI } Co-chief scientists
J. Kirkpatrick - DSDP - igneous petrologist & editorial representative
D.H. Matthews - Cambridge - geophysicist
N. Petersen - Munich - Palaeomagnetist
P. Cambon - CNEXO - X-ray fluorescence
J. Honnorez - Miami - Igneous petrologist
D. Ohnenstetter - Nancy - Igneous petrologist
H. Sato - Japan - Igneous petrologist
H. Schmincke - Bochum - Igneous petrologist
H. Dick - WHOI - Igneous petrologist
M. Dungan - NASA - Igneous petrologist
F.N. Hodges - Stony Brook - Igneous petrologist
A. Erickson - Athens, Ga. - Heat flow
R. Aguilar - Schlumberger - Logging

Leg 47a - Shipboard Scientific Party

W.B.F. Ryan - L-DGO
U. Von Rad - BGR Hannover - } Co-chief scientists
M. Arthur - Princeton - Sedimentologist
I.S. Lopatin - USSR - Sedimentologist
O. Weser - DSDP - Sedimentologist, Staff representative
M. Sarntheim - Kiel - Sedimentologist
F. McCoy - L-DGO - Sedimentologist
M.B. Cita - Milan - Palaeontologist (forams)
G.P. Lutze - Kiel - Palaeontologist (forams)
N. Hamilton - Southampton - Palaeomagnetist
P. Cepek - BGR, Hannover - Palaeontologist (nannos)
F. Wind - Tallahassee - Palaeontologist (nannos)
G. Mountain - L-DGO - Physical properties
J. Weylan - WHOI - Organic geochemist
C. Cornford - Julich, BGR - Geochemist/sedimentologist
L. Carifal - SIO - Assistant Curator

Leg 47b - Shipboard Scientific Party

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J-C. Sibuet - COB - } Co-chief scientists
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A. Rogers - EXXON - Organic geochemist
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D. Habib - N.Y. - Palynologist

Leg 49

Co-chief scientists: K. Hinz and J. Thiede

IPOD ACTIVITIES IN MEMBER NATIONS

West Germany

Among the several IPOD oriented activities organized in Germany is the Cretaceous working group, which is compiling a data bank of biostratigraphic information. It is intended that this will share the same format and be compatible with the Cainozoic data bank at DSDP. This is part of the national IPOD research program.

German research vessels have also played a large part in the IPOD site survey program. During 1975, work was carried out in the Norwegian Sea, in the northeast Atlantic off N.W. Africa by METEOR and VALDIVIA, surveying sites for the Passive Margin drilling on Legs 47 and 49. In addition this year METEOR has worked south of Iceland, around sites 9, 11 and 11a crustal sites and has surveyed potential sites for this program both on the east and west sides of the Reykjanes Ridge.

Complementary to the financial contribution assigned to NSF, the German government has also allocated an equivalent amount of funding to be spent on IPOD activities within Germany. This covers the costs of the national DSDP research program travel for panel and committee members to attend meetings, costs of ship time, explosives, etc. for site surveys. In all this program has cost over $5.2 m since 1974.

Japan

Within Japan there is an internal IPOD organization comprising approximately 130 scientists from the universities, the geolological survey, the hydrographic office and the meteorological agencies. A Japanese national scientific committee, consisting of 14 experts, mainly directors or heads of the various governmental organizations or institutions, acts as the advisory body to the Ocean Research Institute, who is the member institution of IPOD and JOIDES. The same committee acts as the advisory body to the Department of Education of the Government.

After accepting the proposals of these advisory bodies, the Ocean Research Institute has proposed some drilling sites on the lower part of the western slope of the Japan trench, in the Shikoku Basin along the east-west transect and over the Amami, Daito and Okidaito ridges, and one site in the Okinawa trough, as part of the west Pacific program.

Site Survey Activities

As well as a lot of effort being put into compiling the existing data in these regions, the following site survey program of surveys both directly for IPOD and related to IPOD will be carried out:-

Ship's Name	Duration	Survey Area
	1975	
BOSEI-MARU	Oct. 14 - Oct. 29	Daito ridges, Kyushu-Palauo Ridge
BOSEI-MARU	Nov. 7 - end of Nov.	Shikoku Basin
RYOHU-MARU	Nov. 21 - Dec. 10	Shikoku Basin
	1976	
HAKUHO-MARU	Jan. 13 - Apr. 12	Mariana
BOSEI-MARU	Jan. 13 - early Feb.	Mariana
HAKUHO-MARU	May 31 - June 29	Shikoku Basin, Daito Ridges
HAKUHO-MARU	January, several days	Ogasawara

BOSEI-MARU or TOKAIDAIGAKU-MARU II	40 days	
HAKUREI-MARU	April-July 100 days	Off Sanriku coast
Hydrographic Office's Survey vessels	1975-1976	Okinawa

Those ships belong to:

BOSEI-MARU, Tokai University
RYOFU-MARU, Japanese Meteorological Agency
HAKUHO-MARU, Ocean Research Institute, University of Tokyo
HAKUREI-MARU, used by the Geological Survey of Japan
TOKAIDAIGAKU-MARU II, Tokai University

In addition the multi-channel survey will be carried out in the target areas by the newly constructed ship KAIYO-MARU this coming summer. The multi-channel data already being collected by the governmental organizations in the vicinity of Japan will also be offered to IPOD Site Survey Management.

France

CNEXO, the member institution, has set up an organization informally known as IPOD-FRANCE whose role it is to coordinate all French efforts towards planning and site selection, participating in drilling operations and exploitation of the results. The decisions are made by a Directorial Committee chaired by the Director of CNEXO and staffed with senior representatives of the research and funding government agencies having interests in IPOD.

Scientific recommendations are made by the Scientific Committee which comprises five working groups which correspond to the ocean crust, ocean palaeoenvironment, active and passive margins and site survey panels. The Chairmen of these groups are usually a member of the appropriate JOIDES panel. The Bureau Permanent acts as an executive portion of the Scientific Committee and consists of representatives of the different research agencies and the chairmen of the five working groups.

Funds are made available internally to cover travel to JOIDES panel meetings, for work on the results of the drilling, site surveying, including the supply of explosives and shipboard equipment together with help to support research laboratories working on IPOD results. Included in this is also a reorientation and training fund which covers exchanges with other countries, especially the U.S.

A large French contribution to IPOD site surveys has been made for Legs 47 and 48 and surveys are also in progress in the Caribbean.

I hope to be able to report on the IPOD organization and activities within the USSR and the United Kingdom in the next issue of JOIDES JOURNAL.

DRILLING OBJECTIVES

Leg 47a (Fig. 3a)

Near 26°30'N, 15°28'W continental slope west of Cape Bojador.

Three sites (47-2,3 and 4), are proposed off Spanish Sahara in the deeply incised canyon region. The canyons are incised through Mesozoic sediments so that stratigraphic closures no longer exist, thus providing a relatively safe drilling target.

Two reflectors are seen in seismic reflection records, D_1 which may be Eocene and D_2 which may be middle Cretaceous. The hole is planned on the shoulder of the canyon and should penetrate into Lower Cretaceous and possibly into Jurassic deep sea facies. The major objectives are to investigate the history of regressive type margins, to correlate the shallow water facies with those of the slope and rise, to investigate vertical tectonic history of this area, the origin of the unconformities, palaeoproductivity and upwelling and the relationships of the N.W. African margin with Tethys.

The Safety Panel approved two sites providing that the holes are continuously cored and that the sediments are carefully monitored for hydrocarbon content, and that the holes should penetrate no deeper than the depth to the bottom of the canyon infill.

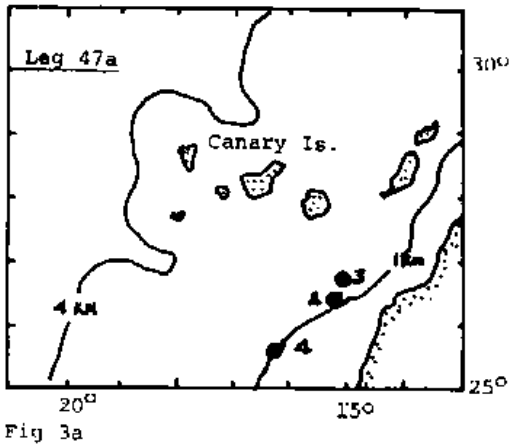


Fig 3a

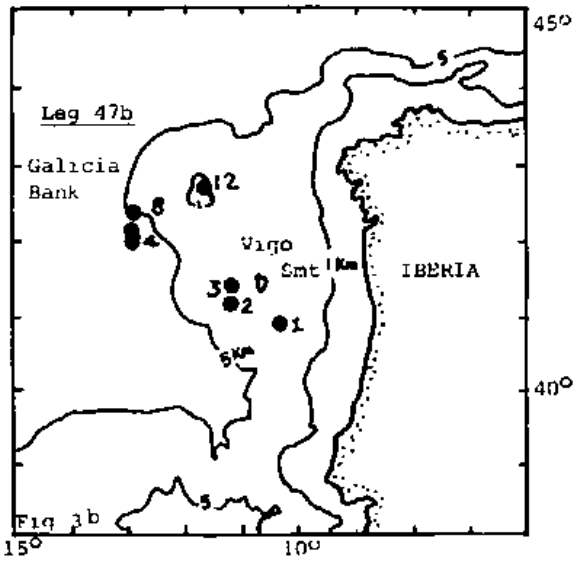
Leg 47b (Fig. 3b)

Three sites are planned for this leg, whose objectives are threefold, to date the oldest post-rifting sediments overlying continental crust, to date the oldest sediments overlying oceanic crust and hence to learn the age of separation of Newfoundland and Iberia, and to investigate the post-rifting sedimentary history of this region.

One site out of Sites 47b-1 to 3 will be chosen. These lie around Vigo seamount and will satisfy the first objective. The sites are located near 41°15'N, 11°W each in approximately 2100 m of water and where basement lies beneath just over 1 km of sediments. The Safety Panel approve the sites with the condition that if the basement should be found to be high porosity/permeability shallow water carbonates, drilling should stop at basement. Should the basement turn out to be crystalline, then drilling may continue to the termination of the bit.

Sites 47b 4-8 and 10, lie on or close by a N-S trending basement ridge near 42°50'N, 13°W. One site from these will be chosen in the hope of finding oceanic crust and determining the age of the oldest overlying sediments. This will be a re-entry site, if penetration into the basement is required, and lies in approximately 5 km of water with basement lying approximately 1 km below the sediments.

The third site, 47-12, located on top of Galicia Bank in 700 m of water will sample the shallow water carbonates and investigate the history of subsidence of this bank.



Leg 48 (Fig. 4)

This leg has two areas of interest, the northern margin of the Bay of Biscay and on Rockall plateau. In northern Biscay three sites will sample the sediments overlying tilted blocks and half grabens. Three formations are seen which are probably post Eocene - Quaternary, Palaeocene - Eocene and Mid-early Cretaceous in age. The latter formation also overlies the oceanic crust in the Bay of Biscay and rests unconformably on acoustic basement on the Meriadzek Terrace and Trevelyan escarpment.

The drilling objectives at these sites are to investigate initial rifting processes and the onset of spreading at passive margins to investigate the ocean continent boundary. A stratigraphic section will reveal the vertical tectonic history of this region during the formation of the Bay of Biscay and the adjacent North Atlantic. The deeper sites will penetrate the Cenozoic-Mesozoic boundary to provide biostratigraphic data on the nature of the CCD at high latitudes.

The second part of the leg will be spent at the S.W. corner of Rockall plateau. Two sites will be drilled whose major objective will be to investigate the subsidence history of this region in relation to the three separate phases of opening of Rockall Trough, the North Atlantic and the Reykjanes Ridge. The continent ocean transition across margins of differing age and structural development will also be examined. Figure 4 shows all the potential sites from which three sites will be chosen in Biscay and two on Rockall Bank.

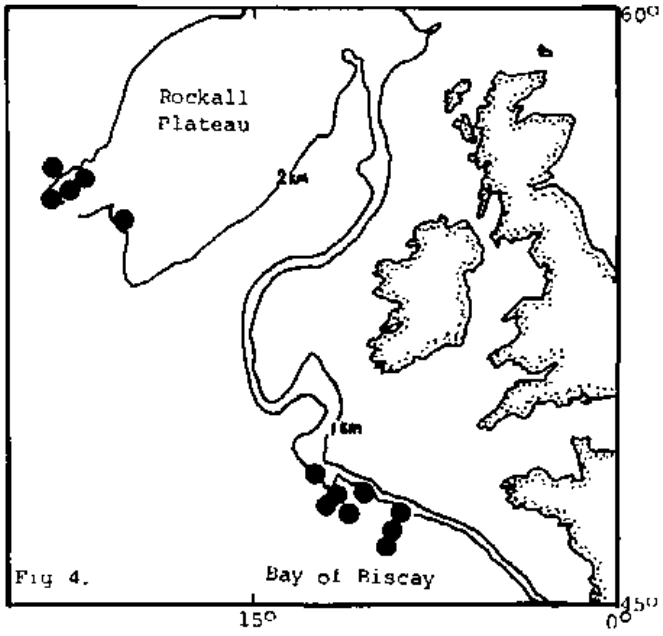


Fig 4.

Leg 49

Drilling plans for this leg still remain to be finalized, and the Vøring Plateau and Lofoten Basin still await the approval of the Norwegian authorities before drilling can take place. Optimally it is planned that about two thirds of this leg will be spent in the Norwegian Sea and one third on crustal sites S.W. of Iceland.

The sites currently proposed in the Norwegian Sea include two sites on the Vøring Plateau to drill below the "basement" sampled on Leg 38. Subsequent

multi-channel reflection profiles show that stratification beneath this layer, suggesting that it is a lava flow rather than true basement. The objectives are to investigate the history of a rifted passive margin, to sample material injected at the time of initial rifting, and to compare these basalts with those formed during steady-state spreading conditions, and to investigate the vertical tectonic and the glacial history of this region.

Site 49-3 is located in the Lofoten Basin in a water depth of 3060 m where a re-entry site might penetrate through terrigenous sediments, calcareous oozes, clays and mud to assumed flow basalt at 4200-4300 m subsurface.

A number of potential sites are also proposed on Jan Mayen Ridge in water depth of approximately 900 m and with a sediment thickness of 1000 m or less. None of the seismic profiles have shown acoustic basement within reach of the drill, however it is hoped to penetrate older horizons at shallow depths from which the relationship of Jan Mayen to eastern Greenland and its possible continental nature may be investigated.

The three crustal sites 9, 11 and 11a are intended to investigate the geochemical anomaly associated with the Iceland hot spot. The original sites planned to be on the east flank of the ridge were relocated onto the western flank of the Reykjanes Ridge after site surveys had revealed too great a sediment thickness. The three sites will investigate geochemical and petrographic variation with both time and distance from the hot spot center.

NEWS ITEMS IN BRIEF...

New Chief Scientist

Dr. David G. Moore has recently joined DSDP as Chief Scientist, replacing Dr. N. Terence Edgar. Dr. Moore was formerly at the Naval Undersea Center in San Diego, where he was a research marine geologist.

New Committee Chairmen

This summer will mark the rotation of the Chairmen of the JOIDES Executive and Planning Committees. For the next two years Dr. Maurice Rattray will chair the Executive Committee and Dr. Joe R. Creager the Planning Committee.

Relocation of the JOIDES Office

Accompanying the new chairmanships the JOIDES Office will relocate this summer to the University of Washington at Seattle. The move will probably take place during July. Please note that the JOIDES Office will be coordinator-less from 8 April until 24 May, while Carol is at sea.

Address List of Panel Members

An updated list of panel membership is appended to this edition of JOIDES JOURNAL. As the majority of panel members are highly mobile, there are frequent changes in addresses to keep up with. Please notify the JOIDES

PANEL AND COMMITTEE MEETINGS

	1976								
	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
XCOM	22-23 L-DGO			?			?		
PCOM	18-21 L-DGO			6-8 Boulder			5-7 Brest		
OCP	15-17 Wash. D.C.			20-21 L-DGO?			12-13 L-DGO		
AMP	5-7 DSDP								
PMP						27-29 Villefranche			
OP		S.Atl. W.Grp. ?Paris		1-3 L-DGO		27-29 Villefranche			
SS	6 -Ad Hoc, DSDP					?			
Sed. Pet.						16-17 Edinburgh?			
IG									
OG		23 New Orleans							
Strat.Corr.				2-3 L-DGO					
Downhole	16 Wash. D.C.								
Safety									
IH									
Leg Mtgs.		3-7 42b, L-DGO							

Leg	47	48	49	50	51	52

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