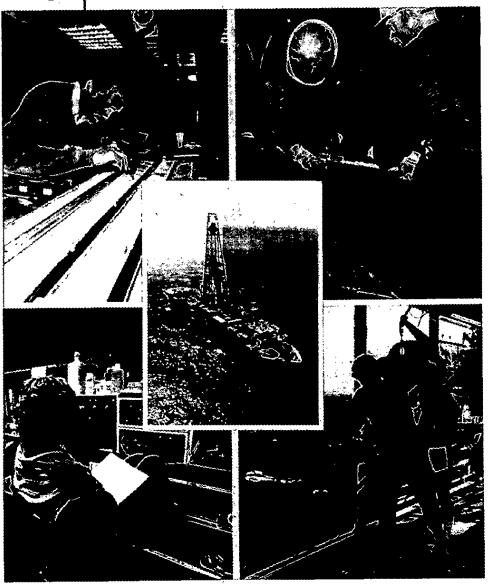
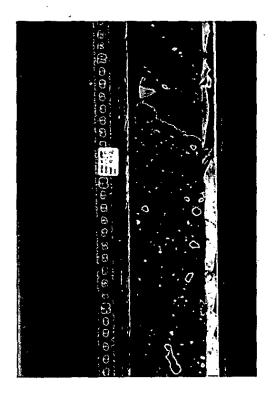
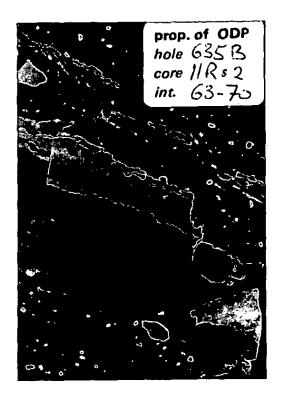


VOL.XI, No.2 JUNE 1985

JOIDES Journal







Left: Section 2 of ODP Core 11R, Hole 635B (Bahamas) shows a sequence bearing clasts of (white) chalk in a micritic matrix. The micritic material is disrupted by an interval of faulted slump folds that are probably a product of lithification/differential loading. Total section is interpreted by Leg 101 cruise participants to be of late Albian-early Cenomanian age and is the result of debris flow/slumping activity that occurred in a dewatering carbonate slope environment. (Photo and core interpretation are courtesy of J.A. Austin, University of Texas; W. Schlager and A. Droxler, University of Miami.

Right: Detailed view of Core 11R, Hole 635B of the faulted slump folds shown at left. Fault dips are believed to primary. (Photo and core interpretation courtesy of J.A. Austin, University of Texas; W. Schlager and A. Droxler, University of Miami.)

FRONT COVER

Aboard the JOIDES RESOLUTION a myriad of shipboard operations gather information and data about seafloor sediments and the underlying lithosphere. Daily activity includes (in a counterclockwise direction) drilling activities, core description, sample analysis and core handling/storage. These activities combine to uncover the secrets of the earth's oceanic crust. (Photos courtesy of J. Beck, ODP, Texas ALM University)



JOIDES Journal



TABLE OF CONTENTS VOL.XI,No. 2 JUNE 1985

PUBLICATION STATEMENT
JOIDES RESOLUTION OPERATIONS SCHEDULE 2
JOIDES PANEL AND COMMITTEE MEETINGS
FOCUS Letter from the Planning Committee Chairman
SCIENTIFIC OBJECTIVES FOR LEG 102 5
SCIENTIFIC OBJECTIVES FOR LEG 103
SCIENTIFIC OBJECTIVES FOR LEG 104
ODP SCIENCE OPERATORS REPORT
JOIDES COMMITTEE REPORTS
ODP SAMPLE DISTRIBUTION POLICY 65
ODP GUIDELINES FOR THE SUBMISSION OF PROPOSALS/IDEAS 73
ANALYSIS OF PROPOSALS RECEIVED BY THE JOIDES OFFICE 80
NEW PROPOSALS
DEEP SEA DRILLING PROJECT
JOIDES/ODP BULLETIN BOARD
OFFICIAL ODP PANEL ABBREVIATIONS
DIRECTORY OF JOIDES COMMITTEES, PANELS AND WORKING GROUPS 96
ALPHABETIC TELEPHONE/TELEX DIRECTORY

PUBLICATION STATEMENT

The JOIDES Journal is prepared and distributed for the Ocean Drilling Program by the JOIDES Office at the Graduate School of Oceanography, University of Rhode Island, under a contract provided by the National Science Foundation and administered through the Joint Oceanographic Institutions Inc., 2100 Pennsylvania Avenue, N.W., Washington, D.C. 20037. The material is based upon research supported by the National Science Foundation under Contract No. NSF OCE 83-17349.

The JOIDES Journal serves as a means of communication among the JOIDES committees and advisory panels, the National Science Foundation, the Ocean Drilling Program and interested earth scientists. Any opinions, findings, conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the National Science Foundation.

The information contained herein is preliminary and privileged. It may not be cited or used except within the JOIDES organization or for purposes associated with the Ocean Drilling Program. This Journal may not be used as a basis for other publications.

Direct comments and suggestions concerning this issue to the JOIDES Journal publication staff: Darryl J. Keith, editor; Maria Burdett, production coordinator; JOIDES Office, Graduate School of Oceanography, University of Rhode Island, Narragansett, RI 02882-1197.

Request additional copies of this issue and available back issues from: Joint Oceanographic Institutions Inc., 2100 Pennsylvania Avenue, N.W., Room 316, Washington, D.C. 20037.

OPERATIONS SCHEDULE

JOIDES RESOLUTION

LEG	LOCATION	DEPART DATE	DEPARTURE DATE	DESTINATION	ARRIVAL DATE	IN PORT
101	Miami, Florida	31	31 Jan	Mismi Plonide	2	
9		;	-			14-19 MRT
102			19 Mar	Norfolk, Virginia	11 Apr	11-15 Apr
102B N (transit)	Norfolk, Virginia t)		15 Apr	Ponta Delgada, Azores	25 Apr	25 Apr
103	Ponta Delgada, Azores	26	26 Apr	Bremerhaven, FRG	20 Jun	20-25 Jun
104	Bremerhaven, PRG	25	25 Jun	Stavanger, Norway	11 Aug	11-16 Aug
105	Stavanger, Norway	16	16 Aug	St. Johns, Newfoundland	25 Oct	25-30 Oct
106	St. Johns, Newfoundland	30	30 Oct	Walaga, Spain	25 Dec	25-31 Dec

revised 4/16/85

1985 MEETINGS SCHEDULE

	1 117 111	T '12
Date	Place	Committee/Panel
5-6 June	Washington, DC	ODP Council/EXCOM
10-11 June	Paris, France	MED-WG
12-14 June	Halifax, NS	DMP
18-19 June	Halifax, NS	SSP
25-27 June	Hannover, FRG	PCOM
24-26 July	LOGO (i.i.f.)	SOHIP
20-22 August*	Venue to be arranged	WPAC
20-22 August*	Venue to be arranged	IOP
29-30 August	Strasbourg, France	LITHP
16-17 September	Bonn, FRG	EXCOM
18-20 September*	WHOI	SOP
25-26 September	San Juan Island, WA	CEPAC
8-10 October	URI	PCOM
22-23 October	Venue to be arranged	PPSP
23-25 October*	Venue to be arranged,	TECP
19-20 November	Venue to be arranged	EXCOM
	no include	1

13 1 34.

^{*}Meeting dates are tentative.

FOCUS

Wonder of wonders, everything works! At the risk of either insulting or complimenting all of the engineers, fabricators and other technical personnel involved, I reflect here upon the general surprise and delight within the scientific community when we realized that the JOIDES RESOLUTION and all of its sophisticated scientific systems really did work the first time out of their boxes. That reaction was followed by an almost audible sigh of relief from the planning and funding communities. I have been involved in enough "high-tech" experimentation at sea to bring a healthy pessimism to any first time operation, and to couple it with a monumental amount of respect for the technical expertise and dedication that can be brought to bear to make systems work. I add that success is constituted not by performance in the manufacturer's laboratory, but at sea where additional parts and people cannot be summoned on a moment's notice. Drilling operations started slowly on both Legs 101 and 102, but speeded up markedly as each of the SEDCO drilling crews ironed out the remainder of the shakedown adjustment problems. Operating times used to plan future sites are now essentially the same as those used for GLOMAR CHALLENGER.

The major unanswered operational questions to be dealt with in the remainder of 1985 are bad weather stability and the bare rock drilling systems. Although the ship will hold position in high winds and large, short period waves, we still have to learn our limits in high winds and long period swells. We also have yet to deal with icy water.

Both of Legs 104 and 105 in the Norwegian Sea, Labrador Sea and Baffin Bay will provide us with these experiences that can be factored into our high latitude plans for 1987 and 1988 in the Antarctic.

In another six months the first guidebase for spudding a hole on the unsedimented volcanic terrain of the Mid-Atlantic Ridge crest will be deployed. Baring a major catastrophe, this will be followed shortly by additional legs of bare rock drilling on the Mid-Atlantic Ridge and East Pacific Rise. This technological nightmare is forced on us early in the program by the general shiptrack and the generally accepted rationale to start these natural laboratories on the spreading centers that we know best and at relatively proximal locations. In order to keep this schedule, we are forced to stretch both the engineering and financial aspects in the early phase of the program. However, the only scientific option is to defer the entire bare rock drilling effort over five years until at least 1991 when the ship returns to the eastern Pacific. This is an unacceptable consequence, for it is one of the prime objectives on which the program was built.

We have been through a long and arduous phase of planning and construction that has been brought to a totally successful completion. The scientific challenges and the technical challenges to meet them have only just begun.

/Roger L. Larson

SCIENTIFIC PROSPECTUS FOR LEG 102

The following paragraphs are a summary of selected sections of the Scientific Prospectus for ODP Leg 102. Interested parties may obtain further information on Leg 102 by contacting either Christian Auroux, Staff Science Representative for Leg 102, or Robert Kidd, Manager of Science Operations, at TAMU.

During the first 15 years of DSDP, basement penetration (greater than 250 m) was achieved at several sites in young oceanic crust. However, comprehensive borehole geophysical measurements were only successfully conducted at one hole, DSDP Hole 504B in crust 5.9 million years old. These measurements, while few in number and biased towards young crust, have been of landmark importance in the understanding of oceanic crustal structure and velocity. They demonstrate that:

- 1) At site 504, Layers 2A, B and C correspond to rubble, pillow basalts and sheeted dikes.
- 2) Crustal permeability near Site 504 decreases by several orders of magnitude in the upper 500 m of Layer 2 in response to a 10 fold decrease in porosity.
- 3) Underpressures measured in the crust are dynamically maintained by convection due to circulation.
- 4) Convection in the basement near 504B is confined to the high permeability zone near the top of the extrusives.
- 5) The velocity structure of Layer 2 at 504B is controlled not by petrology but by variations in porosity with depth.

On the other hand, there is strong evidence that older crust is profoundly different than its youthful counterpart. This difference is based on the absence of Layer 2A and on data from conductive heat flow studies. Furthermore there is no set of borehole measurements in older oceanic crust that is comparable to that of Hole 504B.

The principle objective of Leg 102 is to acquire a comprehensive baseline suite of borehole geophysical data in crust older than 6 million years. To accomplish this objective, the JOIDES RESOLUTION will resenter one of two basement holes (Site 417D or Site 418A) that were drilled during DSDP Legs 51 and 53 in 110 m.y. old crust (Figure 1). Also a two ship seismic experiment with the R/V FRED MOORE will be conducted at the selected location.

The RESOLUTION will have as its primary target Hole 418A which was drilled to a subbasement depth of 544 m on DSDP Leg 53 and as a secondary target Hole 417D which was drilled to 270 m below basement: Drilling at 418A sampled pillow basalts, massive basalts, and the top of the dike transition zone. Also, during drilling activities at 418A, a logging tool was lost in the overlying sedimentary sequence. If the tool can be fished out, a suite of experiments similar to those conducted at 504B will be run. If Hole 418A cannot be reopened, the ship will proceed to Hole 417D to establish the proposed baseline suite.

The scientific objectives of Leg 102 include:

- 1) the determination of an insitu velocity structure at a site in old oceanic crust and the determination of the presence of.

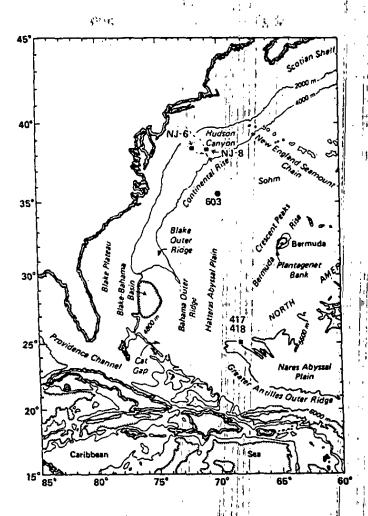
 Layers 2A, B and C and their lithologies.
- the determination of permeability of the old oceanic crust.
- 3) the determination of a porosity vs. depth function for the old oceanic crust.

- 4) the determination of the thickness of the magnetic layer in old crust.
- 5) the determination of whether or not convection and underpressures persist in old crust.
- 6) the sampling and the chemical determination of water in equilibrium with old basement.
- 7) the determination of direction and magnitude of in situ stress.
- A further objective of Leg 102 will be the reopening of Hole 418A, a hole similar to Hole 504B but in older crust. This results in a second deep basement hole that in the future could be deepened.

The specific experiments scheduled include:

- Conventional logging with standard industry tools. These will be run by LDCO to determine the velocity, density, porosity, resistivity, natural gamma radioactivity and equilibrium temperature structure of the section.
- Multichannel sonic logging using a 12 channel sonic tool. This tool, run by LDGO, will determine the compressional, shear and Stonely wave velocity structure of the section.
- A large-scale resistivity experiment conducted by SIO to determine the large scale porosity of the crust.
- Packer tests conducted by SIO that will be run at several depths in the section to measure permeability, pore pressure and in situ stress and will demonstrate the first use of a straddle packer in the drilling program.
- Flowmeter tests to be conducted by SIO that will be run at several intervals. These will measure the rate of flow of water in the drillhole.

- A borehole televiewer (BHTV) to be run downhole in order to observe mesoscopic features such as pillows and dikes in the borehole wall. The BHTV, operated by LDGO, will also be used to determine the orientation of the in situ stress field.
- A 3-axis magnetometer, developed by BGR, to be run in order to determine NRM intensity, inclination and declination vs. depth and alternation in the hole.
- Magnetic susceptibility logging by USGS to determine susceptibility vs. depth and alteration in the crust.
- Heat flow studies to be conducted by WHOI/TAMU. These will measure the temperature gradient in the basement and sediments adjacent to the hole (on a time available basis).
- The removal, from Hole 418A, of the logging tool lost during DSDP drilling and the penetration of a small sediment bridge near the sediment/basement contact. If this operation is successful then the Barnes pore water sampler and the Schlumberger fluid sampler will be used to collect water in equilibrium with the basement material.
- A combined VSP/Oblique Seismic Experiment, using a 3-component borehole seismometer, airgun, explosive sources and the R/V FRED MOORE as the shooting ship, will be conducted in order to determine interval velocities, compressional and shear wave velocity gradients, seismic anisotropy, attenuation and to look for the presence of sub-basement reflectors. This will be the first full-scale test of VSP technology in ODP.
- If the objectives at Sites 418 or 417 cannot be reached, Site 603 (ENA-3D), could be an alternate site along with Sites NJ-8 and NJ-6 (see Figure 1 for location).



Location of sites to be drilled on Leg 102 with alternates.

SCIENTIFIC PROSPECTUS FOR LEG 103

The following paragraphs are a summary of sections of the Scientific Prospectus for ODP Leg 103. Interested parties may obtain further information on Leg 103 by contacting either Audrey W. Meyer, Staff Science Representative for Leg 103 or Robert B. Kidd, Manager of Science Operations, at the Ocean Drilling Program, Texas A&M University, College Station, TX 77843, U.S.A.

The continental margin of Galicia, northwest of the Iberian Peninsula (Figs. 1 and 2), is a sediment-starved passive margin. The margin consists of tilted fault blocks whose upper edges form bathymetric highs that are oriented in a north-south direction. The rifted structure of the margin is overlain by a thin sedimentary cover that varies from 0-3 km thickness (Fig. 3). Because basement and the oldest sedimentary strata are within drilling reach of the D/V JOIDES RESOLUTION, this margin is a very attractive area for ODP drilling. The results of coring and logging here not only will elucidate the history of rifting, subsidence and sedimentation on this margin and the relation of these processes to the initiation and progressive opening of the adjacent North Atlantic but also will bear strongly on the evolution of the more thickly sedimented (and less accessible) conjugate margin of North America.

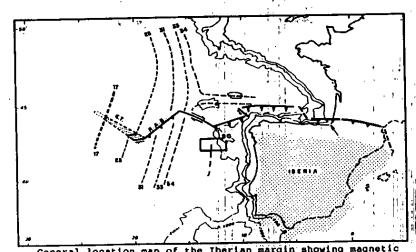
Leg 103 is scheduled to sail from Ponta Delgada, Azores on 26 April 1985. The ship will drill a transect of sites across the Iberian margin, including one into a buried ridge of ultramafic rocks just landward of the oceancontinent crustal boundary and once within a tilted block through the entire syn-rift and pre-rift sedimentary sequences into continental basement. If time permits, an additional hole will be drilled into either another tilted, faulted block or on the outer ridge. Leg 103 will end in Bremerhaven, Federal Republic of Germany on 20 June 1985.

PREVIOUS STUDIES

The Iberian margin has been previously drilled in 1976 during IPOD Leg 47B (Site 398; Sibuet, Ryan et al., 1979; Fig. 4). At this site, the whole post-rift section (E. Albian-Recent) and most of the syn-rift section (Hauterivian-L. Aptian) were recovered; however, the drill did not reach the base of the syn-rift section, the pre-rift section or the basement.

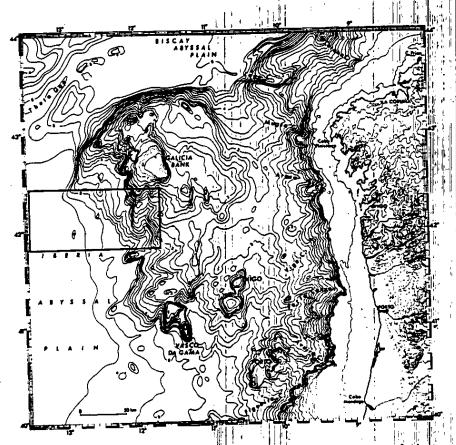
The results of coring at Site 398 indicate that the syn-rift sediments (acoustic unit 4, Fig. 4) of the E. Cretaceous are of detrital origin having been eroded from a carbonate platform during the L. Jurassic. Further, the youngest beds beneath the post-rift discordance are L. Aptian (~ 110 m.y. old) black mudstone and shale. The unit is also characterized as being acoustically transparent and composed mainly of distal, organically rich turbidites that were deposited in intermediate water depths during Early Albian-Mid Cenomanian times (acoustic unit 3, Fig.4). The L. Cretaceous-E. Cenozoic sections are incomplete but appear to be essentially pelagic sediments that acoustically appear as strong parallel reflectors (acoustic unit 2, Fig. 4). The L. Eccene-Recent section consists of pelagic sediments with intercalated turbidites (acoustic unit 1, Fig.4) that unconformably overlie older strata (the Pyreanean discordance; Grimaud et al.,1982).

Seismic reflection profiles further indicate that the margin is structurally composed of tilted crustal blocks (Montadert et al., 1974; 1979) whose seaward-facing scarps along the uptilted edges, exposed crystalline basement. Dredge samples from these escarpments



General location map of the Iberian margin showing magnetic anomalies in the northeast Atlantic. Shaded area represents position of Iberia when anomaly 33 was formed. Arrow indicates direction of Iberian motion during Paleocene and Eccene time.

B.G. = Galicia Bankdrilling area (Pigs. 3,4,11); K.T. = King's Trough; R.A.B. = Azores-Biscay Rise. Modified from interpretation by Grimaud et al., 1982.



Bathymetry of the continental margin northwest of the liberian Peninsula, showing location of Leg 103 drilling area (Pigs. 3,4,11). Bathymetric contours are in kilometers. Modified from Vanney et al., 1979.

suggest that they are comparable to sialic rocks which crop out landward on Galicia (Groupe Galice, 1979; Boillot et al., 1979).

At the foot of the margin, and in line with magnetic anomaly J (Sibuet and Ryan, 1979; Guennoc et al.,1979), is a north-trending basement ridge which approximately follows the 130 meridian. On east-west seismic profiles, the ridge resembles a diapir (Fig. 5). A large dredge sample, which consisted of serpentinized lherzolite (Boillot et al., 1980), was recovered from the western side of the ridge and suggests that the basement underlying the sediments includes rocks from the upper mantle. Further, the basement ridge lies between typical oceanic crust to the west and thin continental basement to the east. Dredge hauls taken from strata which overlie the continental basement consist of unfossiliferous red sandstone (Triassic ?) and platform carbonates (L. Jurassic) (Boillot et al., 1979); Mougenst, personal communication). This information combined with seismic reflection profiles suggest that these strata were deposited in a Triassic (?) and Jurassic sedimentary basin that was subsequently broken up by the E.

Cretaceous rifting event that shaped the major structural pattern of the present-day margin.

SCIENTIFIC OBJECTIVES

As crustal rifting seems locally to have uncovered material from the upper mantle, based on a single lherzolite sample that was dredged from the ridge at the foot of the margin, it is important to verify this tentative conclusion. The verification process can be fulfilled by obtaining fresh drill samples from the ridge. From the study of the mineralogy, chemistry and petrology of cores from the ridge, our knowledge of the following topics should be enhanced:

-the mechanisms of tectonic rifting

-serpentinization of upper mantle rocks

-the development of diapirs at the foot of the margin in relation to serpentinite mobility

-the significance of lower crustal or mantle rocks at the top of ophiclite sequences.

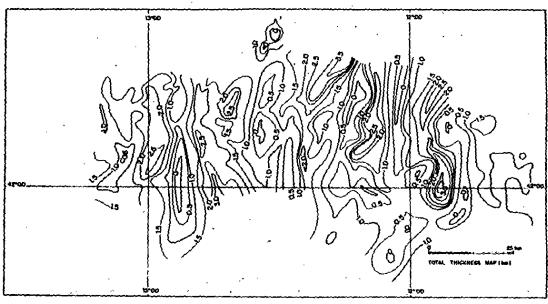
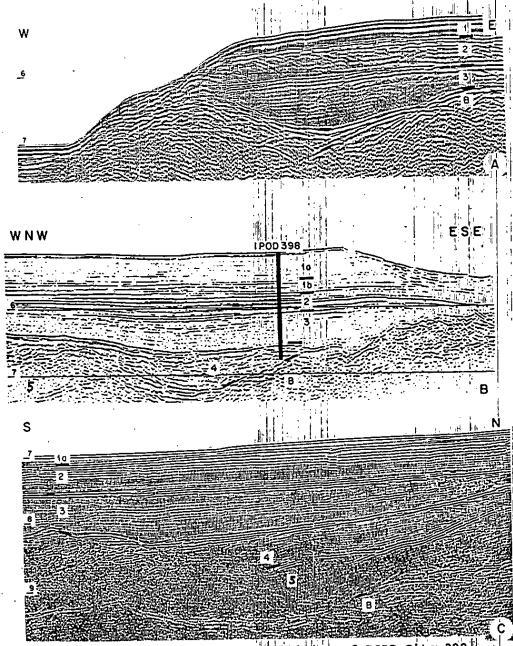


Fig. 3 Map of total sediment thickness above accustic basement. Contour interval= 0.5 km. Map location shown in Fig.2

Coring will also provide important information on the timing of the paleoenvironmental changes in this region of the Atlantic as well as address questions concerning:

the rates and amount of subsidence from the Triassic to the L. Jurassic

the timing of the first appearance of marine waters in the incipient oceanic rift and



Acoustic stratigraphy in vicinity of DSDP Site 398.

Fig. 4 1,2,3,4: syn- and post-rift formations, described in the text. 5: pre-rift sediment. B: probable basement. Vertical scale = two-way travel time in seconds. From Groupe Galice, 1979.

the provincial relations of the biota of those waters

-the timing and rates of drowning of the late Jurassic carbonate platform

-the timing of significant transgressions and regressions, shifts in coastal onlap relation and the development of unconformities to evaluate the relative roles of eustasy and vertical tectonic movements in determining the stratigraphy of this margin

-the determination of the age and physical significance of the many key seismic reflectors, as a prerequisite to regional correlation and regional interpretation of the observed seismic stratigraphy

-the timing of significant changes in important oceanographic variables such as temperature, oxygenation, fertility, bottom-current activity and carbonate dissolution.

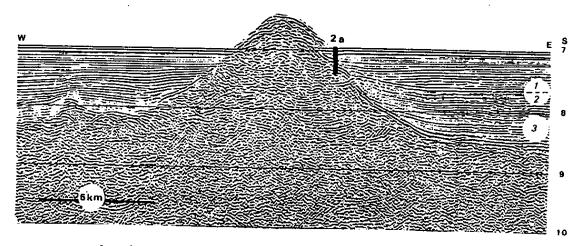


Fig. 5 Location of target site GAL-2A. Lherzolitic rocks have been sampled along the western flank of this feature (Boillot et al., 1980.

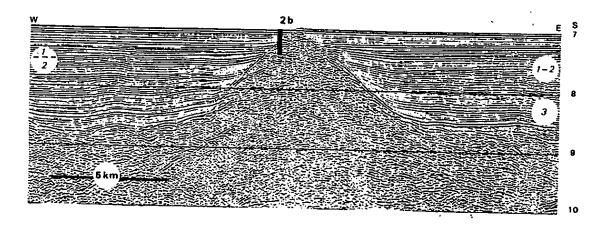


Fig. 6 Location of target site GAL-2B. To the south of this site, iherzolitic rocks have been sampled along the western flank of the ridge (Boillot et al., 1980; Figure 7).

DRILLING PROGRAM

The drilling program for Leg 103 is as follows with prioritized drilling sequences:

l) To drill one shallow (~300 m penetration) single bit hole (Site GAL-2A or GAL-2B) on the ridge from which the lherzolite sample was dredged (Figs. 5 and 6). This hole will provide data on the petrologic nature of the ridge and its heterogeneity as well as provide insight into the origin and history of deformation of ultrabasic rocks in the region.

2) A very deep (~1750 m penetration) multiple re-entry hole

(GAL-4B) will be drilled through post-//syn-, and premrift strata into crystalline basement (Fig. 7). The cores and downhole logs from this hole should delineate the entire history of the margin, from the succession of rifting phases during the Mesozoic, through the drowning of the carbonate platform and the progressive or episodic changes in the environment during the initiation of seafloor spreading. | Cores from the crystalline basement will permit comparisons with the exposed basement of Galicia.

If time permits, other sites will be drilled which include the following:

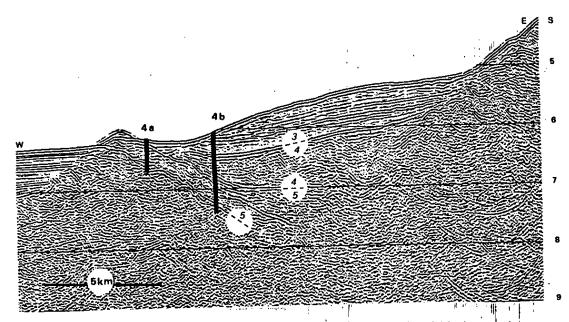


Fig. 7 Locations of target sites GAL-4A AND GAL-4B on a tilted block of the deep Galician margin. Note the pre-rift series (5) tilted with the basement block, and the syn-rift series (4). Formations 1-5 are also shown in Fig.! 5 and discussed briefly in the text.

- 3) One shallow (~400 m penetration) single bit hole (Site GAL-3A) at the summit of the tilted block of the margin closest to the ocean (Fig. 8). Drilling at this location should lead to a better understanding of the nature of the tilted block.
- 3) An additional shallowpenetration hole on the lherzolite ridge at either GAL-2A or 2B, whichever was not drilled at the beginning of the cruise. In the event that drilling at Site GAL-4B cannot penetrate well into the carbonate platform sequence (estimated to be below 1300 m), an alternate back-up plan is to drill at Site GAL-4A which is updip from GAL-4B (Fig. 6) as the carbonate platform is close to the seafloor at this location. Although reaching basement at Site GAL-4A may require a multiple reentry hole, time constraints may dictate that the hole be cored as deeply as possible using a single bit.

REFERENCES

Boillot, G., Auxietre, J.C., Dunard, J.P., Dupeuble, P.A. and Mauffret, A., 1979. The Northwestern Iberian Margin: a Cretaceous passive margin deformed during Eocene. In Talwani, M., Hay, W., and Ryan, W.B.F., (Eds., Deep Drilling Results in the Atlantic Oceans: Continental Margins and Paleoenvironment. Maurice Ewing Series 3, American Geophysical Union: 138-153.

Boillot.G., Grimaud, S., Mauffret, A., Mougenot.D., Korn-probst, J., Daniel, J.M., and Torrent, G., 1980. Ocean continent boundary of the Iberian Margin: a serpentinite diapir west of the Galicia Bank. Earth and Planet. Sci. Letters, 48: 23-34.

Grimaud, S., Boillot, G., Collette, B., Mauffret, A., Miles, P.R. and Roberts, D.B., 1982. Western extension of the Iberian-European plate boundary during the Early Cenozoic (Pyrenean) convergence: a new model. Marine Geology, 45: 63-77.

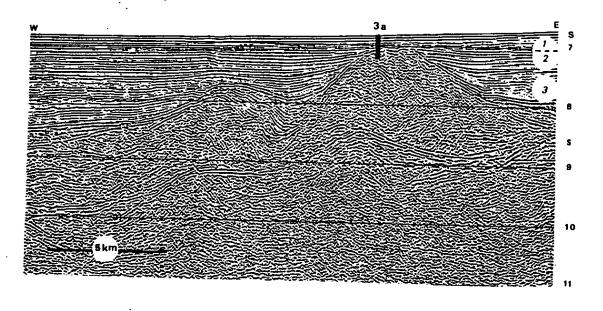


Fig. 8 Location of target site GAL-3A on the deepest tilted block of the margin near the ocean-continent boundary. Formations 1-3 are also shown in Fig. 5 and discussed briefly in the text.

Groupe Galice, 1979. The continental margin off Galicia and Portugal: acoustical stratigraphy and structural evolution. In Sibuet, J.C., Ryan, W.B.F., et al., Init. Repts. DSDP, 47(2): Washington (U.S. Government Printing Office): 633-662.

Guennoc, P., Jonquet, H., and Sibuet, J.C., 1979. Presentation d'une carte magnetique de l'Atlantique nord-est. C.R. Acad. Sci. Paris, 288: 1011-1013.

Lemoine, N., 1984. La marge occidentale de la Tethys ligure. In Boillot, G. (Ed.), Les marges continentales actuelles et possibles autour de la France. Masson, Paris.

Montadert, L., Roberts, D.G., et al., 1979. Init. Repts DSDP, 48: Washington (U.S. Government Printing Office).

Sibuet, J.C., Ryan, W.B.F., et al., 1979. Init. Repts. DSDP: 47(2): Washington (U.S. Government Printing Office).

Vanney, J.R., Auxietre, J.L., and Dunard, J.P., 1979. North-western Iberian continental margin geomorphology. Ann. Inst. Oceanogr., 55: 5-20.



SCIENTIFIC PROSPECTUS FOR LEG 104

The following paragraphs are exerpted from the Scientific Prospectus for 104 as prepared by the Ocean Drilling Program. Additional information may be obtained from Elliot Taylor, Staff Science Representative for Leg 104 or Robert Kidd, Manager of Science Operations at TAMU, College Station, Texas.

During July and August 1985, the JOIDES RESOLUTION will drill targets on the outer Voring Plateau and in the Voring Basin (Fig. 1). The Norwegian Sea area was chosen for drilling in order to answer questions relative to the structural and geological evolution of the Voring Plateau, the paleoceanography of the Norwegian Current and northern hemisphere glaciation and the evolution of polar floras and faunas.

ACOUSTIC STRATIGRAPHY

Numerous seismic studies (Fig. 1) reveal a sequence of seaward-dipping reflectors that underly the margin of the outer Voring Plateau (Fig. 2) and are part of an acoustic stratigraphy that can be subdivided into the following units:

- a) Unit 1 (at approx. 2.5 km): Horizontally layered sediments
- b) Unit 2 (from approx. 2.5 km-down to 4.5 km) arcuate continuous reflectors with seaward dips.
- c) Unit 3 (below 4.5 km): Acoustic basement with homogeneous seismic characteristics and no internal reflectors.

Aided by the drilling results of DSDP Leg 38 (Talwani, Udintsev et al., 1976), the geologic interpretation of these units suggests that Unit 1 is composed of hemipelagic siliceous muds that are separated from Unit 2 by a strong reflector believed to be a basalt flow of tholeitic composition. The composition of Units 2 and 3 remain uncertain as Leg 38 drilling ended near the base of Unit 1. Multichannel seismics, however, and drilling data suggest that Unit 2 may consist of interbedded basalts and sediments.

ORIGIN OF DIPPING REFLECTORS

The origin of dipping reflectors on passive margins represents a fundamental question concerning the mechanisms involved during early basin rifting and initiation of seafloor spreading. Dipping reflector sequences have been identified throughout the Norwegian margin from the Faeroes Platform to the Lofoten Islands (Talwani et al., 1982). Hinz (1981) identified similar sequences in numerous passive margins around the world. Dipping reflector sequences are limited to the structural edges of ocean basins, generally under continental rise or lower slope sediments. In addition, they are associated with the oldest mappable magnetic anomalies. Their geologic setting and implied age suggest that the origin of these reflectors is intimately tied to rifting and/ or early seafloor spreading events. However, the depositional mechanism that emplaced the material forming these reflectors and the tectonic events that create the observed arcuate geometry are a matter of considerable debate.

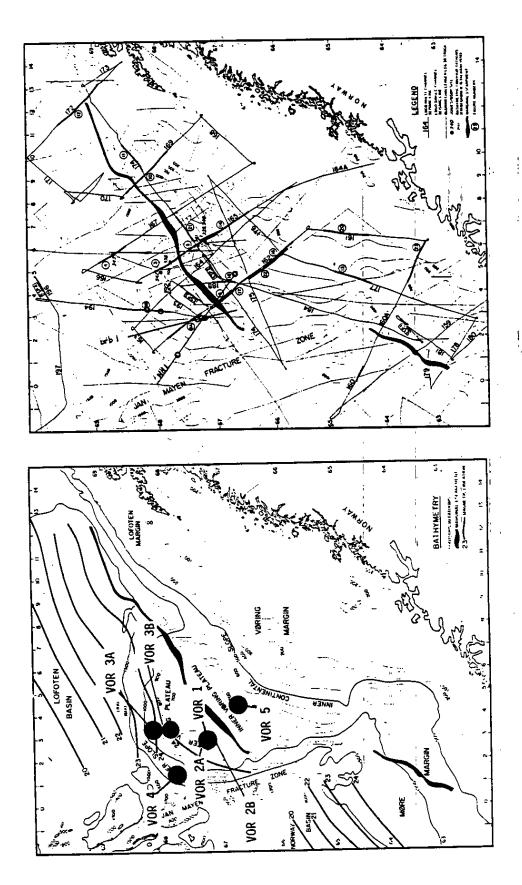
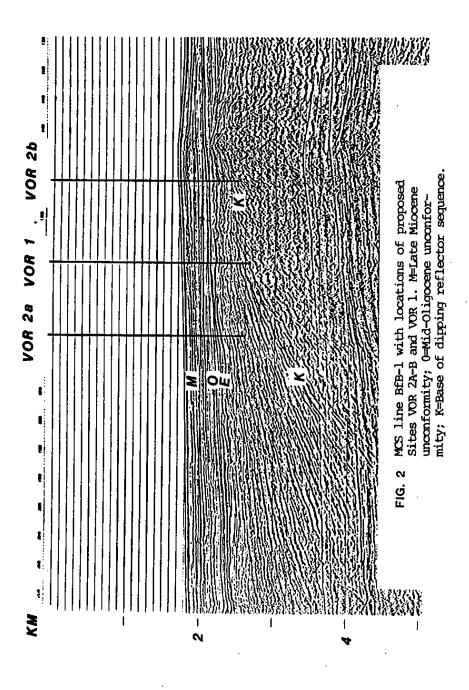


FIG. 1 Bathymetry (left) and location of seismic profile lines (right) of the Norwegian margin between 60 N and 700N. Both maps show locations of targeted ODP Leg 104 drill sites (map from Mutter et al., 1983).



Several hypotheses have been advanced to explain the origin and development of dipping reflector sequences. Mutter et al., (1982) proposed that the production of volcanic material during the earliest stages of seafloor spreading is so great that it is possible for the spreading center to build an edifice up to sea level (Fig. 3). Having gained a subaerial exposure, lavas erupted at the spreading center flow considerable distances away from the ridge axis. Successive eruptions occur by the intrusion of feeder dikes at the spreading center as the crust moves apart, and successive flows overlay and load existing flows. Bodvarsson and Walker (1964) have described such a scheme for the development of lava sequences in eastern Iceland. As spreading at the exposed eruption center progresses with time, new lavas load the underlying units causing them to subside and rotate toward the site of eruption, as described from Icelandic data by Bodvarsson and Walker (1964) and Palmason (1973, 1980). Cann (1974) proposed models for the formation of normal oceanic crust that incorporate the effects of the volcanic load in this way. After a few million years a structure develops that consists of a set of laterally stacked, seaward dipping lavas which as long as the eruption rate is high and the eruption center remains emergent, will continue to develop.

Suites of dipping reflectors are present on the Norwegian margin only beneath the outer Voring Plateau and other regions underlain by the very oldest sea floor in the Norway and Lofoten Basins (Fig. 4). Spreading at an exposed eruption center was, therefore, a transient phenomenon affecting the crustal structure

only during the first few million years of spreading. After this time the eruption rate must have decreased, the spreading center subsided below sea level, and the length of lava outflows erupted at the spreading center decreased abruptly. The normal chaotic structure of the upper parts of the oceanic crust would then develop. Hence, a transition from oceanic crust developed at a subserial eruption center to crust formed at a submerged spreading center occurred.

A second explanation for the dipping sequences (Fig. 5) has been suggested by Hinz (1981). He proposed that extension and attenuation of the continental crust is accompanied by the development of linear zones of dike injections from which lavas are extended onto the attenuated crust in a subaerial environment. As eruption continues, the weight of lavas results in crustal subsidence. Since the model proposes a localized fissure zone from which the lavas emerge at the surface, the regions closest to the fissure acquire the largest build-up of lavas (as occurs in a central volcano). These regions are more heavily loaded and hence are depressed by a greater amount. Therefore, lavas acquire dips toward the fissure zone much as described by Mutter et al., (1982). The fissure zone then becomes the site at which new oceanic crust first forms, splitting the pile of subacrially erupted lavas centrally, leaving one half on each of the continental margins. The dips on these lavas, acquired by loading of the volcanic pile onto the attenuated continental crust, will occur in a seaward direction, i.e. toward the spreading center.

SEAFLOOR SPREADING MODEL FOR DIPPING REFLECTORS

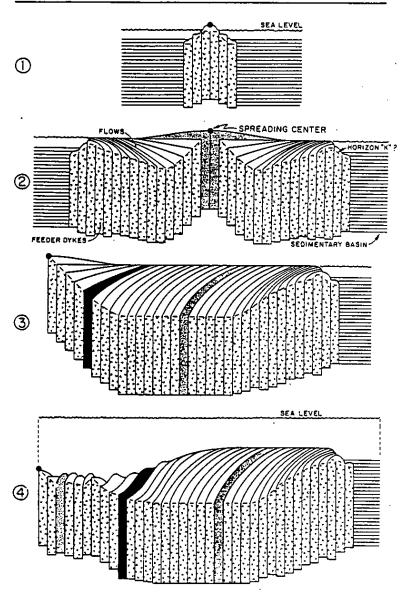


FIG. 3 Mutter et al (1982) model of formation of dipping reflector sequences.

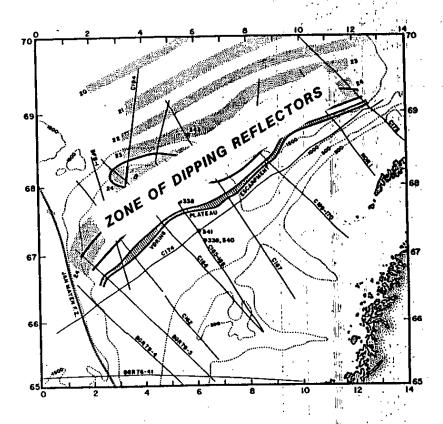


FIG. 4 Location of magnetic anomaly patterns with respect to the region of dipping reflectors (from Mutter et al., 1982).

Smythe (1983) has put forward a third model for the dipping reflectors that attributes them to subaerial seafloor spreading like Mutter et al., (1982). The principle difference between Smythe and Mutter is that Smythe considers the oldest (most landward) of the dipping sequences to have flowed over continental crust. Therefore, the continental-ocean boundary would occur at the lower (most seaward) end of the oldest of the dipping sequences.

These three hypotheses concur regarding the loading mechanism leading to the deformed, arcuate pattern seen in seismic profiles. Similarly, all three suggest a subaerial extrusion of lavas. The primary differences are in the nature of basement underlying the dipping reflectors and the association of their emplacement to rifting or seafloor spreading.

Hinz (1981) pointed out a particularly interesting correlation. He noted that on margins where dipping reflector suites can be recognized, there is no evidence for extensional faulting occurring in the adjacent margin basin near the initiation of spreading. The converse observation seems also to be true; that margins exhibiting extensional faulting lack evidence of dipping reflector suites. It is, therefore, possible that the structure represented by the dipping reflectors forms at margins that do not experience a major extensional episode prior to the initiation of spreading. They may be characteristic of a "nonextensional" end member of passive margin evolutionary

RIFT STAGE VOLCANIC MODEL FOR DIPPING REFLECTORS

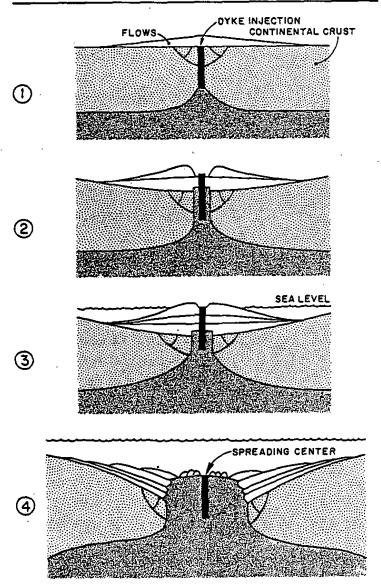


FIG. 5 Hinz (1981) model of formation of dipping reflector sequences.

NORWEGIAN SEA PALEOCEANOGRAPHY

Another major topic that will be addressed by Leg 104 drilling concerns the paleocean-ographic history of the Norwegian-Greenland Sea. Studies from this area will yield important climatic and oceanic information for the northern subpolar environment.

In the Atlantic Ocean and the Norwegian-Greenland Sea, the exchange of surface and deep water masses from the northern and southern hemispheres results in important consequences for global oceanography, deep and shallow hydrography and general circulation patterns.

However, this area has a relatively short geological history that began 55-60 m.y. ago when the Norwegian-Greenland Sea opened (Talwani et al., 1977). About 36 m.y. ago, true deep water passages developed in the area of the Fram Strait and also in the region of the Greenland-Scotland Ridge during late Miocene or Pliocene times (Eldholm and Thiede, 1980; Thiede and Eldholm, 1983). Since that time the North Atlantic temperate waters flow northward, probably as a relatively warm current along the NW European continental margin while cool to cold waters from the Arctic Ocean flow southward along the Greenland continental margin (Fig. 6).

Based on studies of Quaternary sediments, the entire current regime is assumed to have disappeared during glacial times. This disappearance probably resulted from the movement of the northern polar front southward to latitudes between northern North America and southwestern Europe. If so, then this oceanic area has experienced the most extreme climatic changes of any other area during the Quaternary (CLIMAP, 1976). The modern temperate NW European climate depends strongly upon the existence of the warm water influx into the Norwegian-Greenland Sea. Therefore, a detailed understanding of the impact and history of the North Atlantic Drift and of the Norwegian Current is of high interest.

Another paleoceanographic and climatic topic of interest is the assumed early and middle Cenozoic climatic asymmetry between the southern and northern hemispheres. In the southern hemisphere, a glacial-type climate started approximately 40 m.y. ago while in the northern hemisphere a glacial influence can be documented only for the past 2.4 m.y. (maybe for the past 5-6 m.y.). It is therefore important to discover whether this asymmetry is real or if it represents an artifact of the presently available sample material.

Since E. Tertiary times, the polar oceanic water masses of both hemispheres have cooled from approximately 10-15 degrees C. to near 0 degrees. Due to this cooling, marine faunas and floras in both polar ocean regions had to adapt and evolve under the influences of the changing hydrography and climate. With this adaptation, northern and southern hemisphere polar marine faunas and floras have developed characteristic similarities (e.g. in their plankton) however distinct differences do exist (e.g. in the type of end member of the marine food webs). Studies of the evo-lution of these polar oceanic floras and faunas will be included in the paleoceanographic objectives of Leg 104.

From recent investigations of the passive margins which surround the Norwegian-Greenland Sea, it has been well established that the major aspects of sediment distribution and morphology of these margins are controlled by mass wasting events. These episodes have occurred despite morphologically shallow gradients and are probably aided by high sedimentation rates and lithologic variations in seafloor sediments. The physical properties of the very fine-grained, predominantiv terrigeneous sediments covering these margins are not well known but have probably contributed to the potential of these margins for slumping During Leg 104, a detailed physical properties program combined with sedimentologic studies will identify events of mass wasting and characterize the features associated with such occurences!

Other problems to be addressed on Leg 104 will include the subsidence history of the area as it relates to glacial events, dating of erosional pulses of the Norwegian Caledonides and the sedimentology of polar to sub-polar climates.

DRILLING PROGRAM

The operational plan :-

form a transect of sites, VOR 2A-2B, VOR 4 and VOR 5, across the Voring Plateau and into the Voring Basin (Fig. 1).

Drilling at target sites VOR 2A and 2B, alternate sites are VOR 3A, VOR 3B (Fig. 7) and VOR 1 (Fig. 2), will answer many questions surrounding the origin and nature of the dipping reflectors and the evolution of these types of passive margins. Sites VOR 2A and 2B are situated

in approximately 1300 meters of water on the outer Voring Plateau slope (Figs. 1 and 2). Penetration at Site VOR 2A is expected to recover Cenozoic sediments to approximately 430 meters sub-bottom and then sample the dipping reflector sequence to approximately 1000 meters sub-bottom. The sedimentary section at this site will be double HPC cored for proper sampling and the entire sequence will be logged. Site VOR 2B will

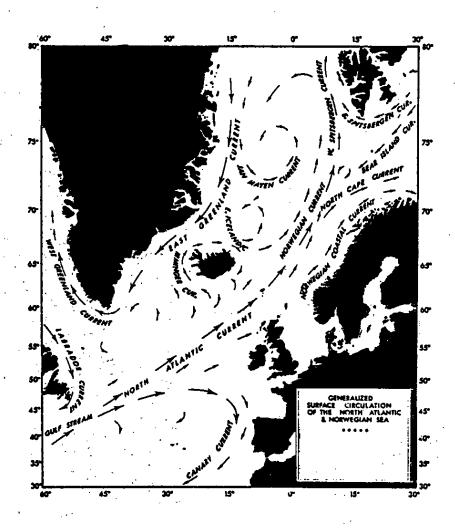


FIG. 6 Present-day surface current patterns in the North Atlantic and Norwegian Sea (from Kellogg, 1975).

penetrate roughly the same lithology with full penetration to 1000 meters sub-bottom to sample Horizon K, a major reflector that marks the base of the reflector sequence.

The second and third priority drilling targets for Leg 104 should provide answers to the paleoceanographic questions regarding the Norwegian-Greenland Sea. The principle drilling objective of VOR 4 (Fig. 8) and 5 (Fig. 9) is to sample Cenozoic sedimentary material. The seismic sections which show the location of the targeted sites are presented in Figs. 7 and 8.

The transect of sedimentary sections obtained at sites VOR 2A-2B, 4 and 5 will yield paleontologic, sedimentary, geochemical, physical properties and magnetic studies from areas in different water depths and at a variable distance form shore.

SPECIAL EXPERIMENTS

Two sites, probably VOR 2A and 2B, will be used for vertical seismic profile (VSP) experiments. The tests will require approximately one full day after drilling and logging have been completed at the site. A hydrophone tool will be lowered down the drillstring and raised in

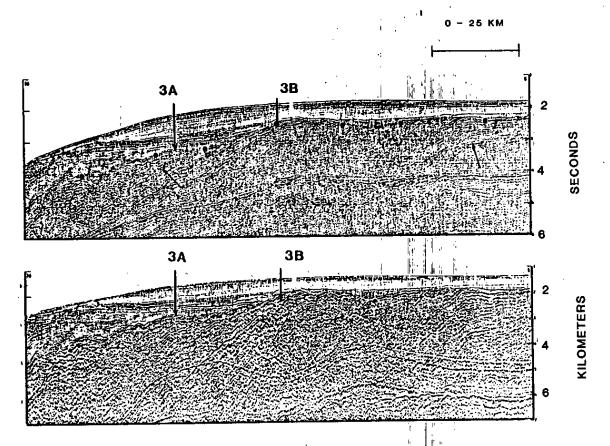


FIG. 7 MCS line C-194 with locations of proposed alternate Sites VOR 3A and 3B. Upper: time section.

Lower: Depth migrated section. (Mutter pers. comm.)

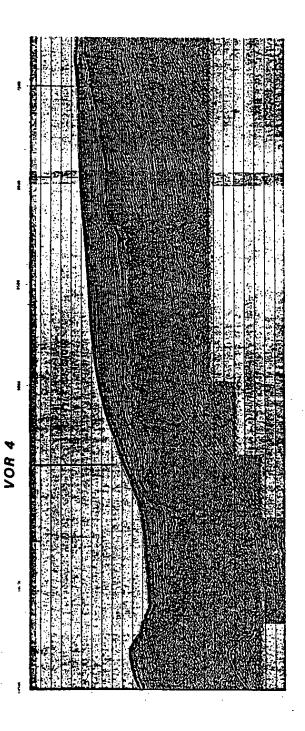


FIG. 8 MCS line NH-1 with location of proposed VOR 4. Location is shown in Fig. 1



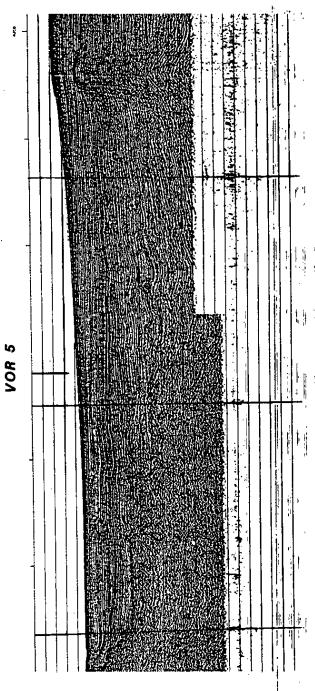


FIG. 9 MCS_line NH-1 with location of proposed Site VOR 5. Tocation is shown in Fig.1

10-15 meter increments while shots are fired from the surface. The resulting seismic information should provide a valuable link between drilling, logging and regional seismic survey results.

REFERENCES

- Bodvarsson, G. and Walker, G.P.L., 1964: Crustal drift in Iceland. Geophys. J.R. Astron. Soc., 9, 285-300.
- Cann, J.R., 1974: A model for
 oceanic crustal structure
 development. Geophys. J.R.
 Astron. Soc., 39, 160-187.
- Climap, Project Members, 1976: The surface of the Ice-Age earth. Science, 191, 1131-1137.
- Eldholm, O., and Thiede, J., 1980: Cenozoic continental separation between Europe and Greenland. Palaeogeogr., Palaeoclimat., Palaeoecol., 30, 243-259.
- Hinz, K., 1981: A hypothesis on terrestrial catastrophes, wedges of very thick oceanward dipping layers beneath passive continental margins—Their origin and paleoen-vironmental significance. Geol. Jahrb., Reihe E, 22, 3-28.
- Kellogg, T.B., 1975: Late Quaternary climatic changes in the Norwegian and Greenland Seas. In: G. Weller and J.A. Bowling (eds.), Climate of the Arctic, Proc. 24th Alaska Sci. Conf., Geophys. Inst. Univ. Alaska, 3-36.
- Mutter, J.C., Talwani, M., and Stoffa, P.L., 1982: Origin of seaward-dipping reflectors in oceanic crust off the Norwegian margin by "subaerial sea-floor spreading." Geology, 10, 353-357.
- Mutter, J.C., Talwani, M., and Stoffa, P.L., 1984: Evi-

- dence for a thick oceanic crust adjacent to the Norwegian margin. J. Geophys. Res., 89, 483-502.
- Palmason, G., 1973: Kinematics and heat flow in a volcanic rift zone, with application to Iceland. Geophys. J.R. Astron. Soc., 33, 451-481.
- Palmason, G., 1980: A continuum model of crustal generation in Iceland; Kinematic aspects. J. Geophys., 47, 7-18.
- Smythe, D., 1983: Faeroe-Shetland escarpment and continental margin of the Faeroes. In: Structure and Development of the Greenland-Shetland Ridge: New Methods and Concepts, edited by M.H.P. Bott, S. Saxov, M. Talwani, and J. Thiede, Plenum Press, New York, 109-120.
- Talwani, M., Udintsev, G., et al., 1976: Initial Rep. DSDP, 38. Washington (U.S. Govt. Printing Office).
- Talwani, M. and Eldholm, O., 1977: Evolution of the Norwegian-Greenland Sea. Geol. Soc. Amer. Bull., 898, 969-999.
- Talwani, M., Mutter, J.C., and Hinz, K., 1982: Ocean continent boundary under the Norwegian continental margin. In: Structure and Development of the Greenland-Scotland Ridge: New Methods and Concepts, edited by M.H.P. Bott, S. Saxov, M. Talwani, and J. Thiede, Plenum Press, New York, 121-132.
- Thiede, J. and Eldholm, O., 1983:
 Speculations about the paleodepth of the Greenland-Scotland Ridge during the Mesozoic and Cenozoic times. In: Structure and Development of the Greenland-Scotland Ridge: New Methods and Concepts, edited by M.H.P. Bott, S. Saxov, M. Talwani, and J. Thiede, Plenum Press, New York, 445-456.

ODP SCIENCE OPERATORS REPORT

1. CRUISES AND SITES COMPLETED

Two cruises of the Atlantic program have so far taken place (Legs 101 and 102); the third (Leg 103) is presently at sea off the Iberian Margin. Two further high-latitude legs are in their final planning stages (Legs 104 and 105).

A. LEG 101: BAHAMAS PLATFORM

The scientific objectives of drilling in the Bahamas during ODP Leg 101 were to understand the evolution of the modern configuration of shallow-water carbonate banks and intervening deep-water troughs, and to study the growth patterns of carbonate slopes and their response to sealevel fluctuations.

Deep Objectives: "Megabank" vs. "Graben" Hypotheses - Leg 101 was designed in part to test two fundamentally different hypotheses for the long-term crustal evolution of the Bahamas. The "megabank" hypothesis holds that the modern archipelago is underlain by a drowned shallow-water platform, while the "graben" hypothesis suggests instead that the present topographic configuration is a faithful reflection of underlying horsts and grabens related to Mesozoic rifting of North America and Africa. On regional multichannel seismic reflection profiles, the inferred top of the "megabank" is marked by a highamplitude reflection with a pronounced compressional wave velocity increase to more than 4 km/sec. During Leg 101, six sites were drilled in an attempt to sample this horizon: 626, 627, 632, 634, 635, and 636 (Figures 1 and 2); only Site 627 was successful.

Shallow Objectives: Carbonate Slope Transects - Previous investigations of Bahamian slopes based upon seismic results, dredging, and piston coring have suggested that they steepen with time and height, are characterized by facies belts which generally parallel bathymetric contours, and respond very differently from their silicilastic counterparts to relative changes in eustatic sea-level. Leg 101 addressed the three-dimensional development of these slopes with two transects, the first north of Little Bahama Bank (Sites 627, 628, 629, 630), and the second in the southeastern part of Exuma Sound (Sites 631, 632, 633) (Figures 1 and 3) $\frac{1}{4}$

Site 626 (250 35.95' N, 790 32.78' W, Water Depth 854 m) -The JOIDES RESOLUTION occupied Site 626 (BAH-1C) in the Straits of Florida from January 31 to February 10, 1985. Four holes were drilled, of which Holes 626C and 626D were scientifically important. Hole 626C was continuously cored with HPC/XCB from 0-179 m subbottom with 36% recovery. Hole | 626D was washed to 179 m subbottom and continuously rotary cored from 179 to 456 m subbottom. Recovery was 3.8%. Flowing sands in both holes were responsible for the low recovery and for the loss of Hole 626D. Together, Holes 626C and 626D penetrated the following sequence:

I. 0-112 m BSF. Carbonate contourite sand (planktonic forams and neritic material), Pleistocene to middle Miccene in age.

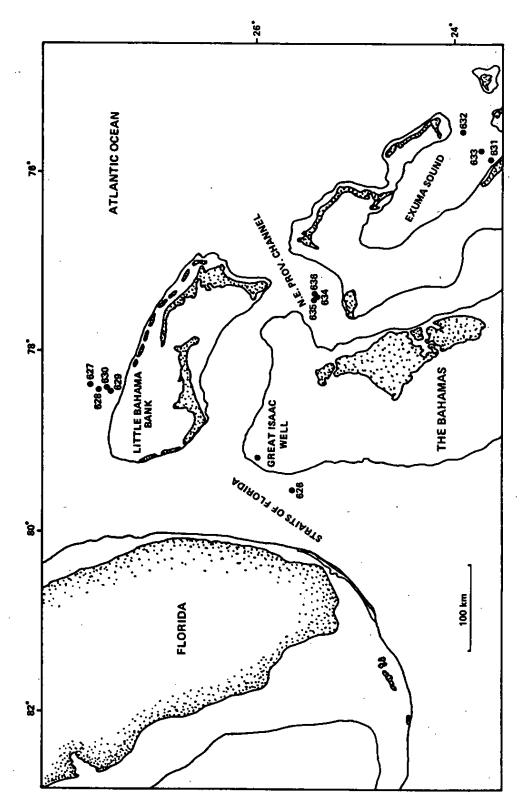


Fig. 1 Location of sites occupied on Leg 101.

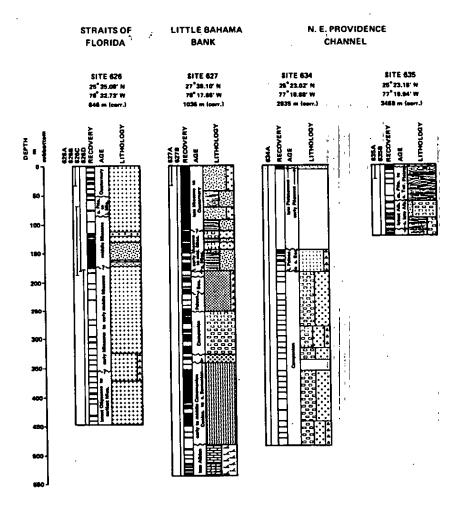


Fig. 2 "Deep objective" sites, Leg 101. (Lithological symbol key appears in Figure 3).

II. 112-170 m BSF. Debris flows and turbidites, middle Miocene in age.

III. 170-456 m BSF. Carbonate sand and calcarenitic limestone (all contourites), middle Miocene to late Oligocene in age.

SITE 627 (27° 38.10' N, 78° 17.70' W, Water Depth 1036 m) - Site 627 on southern Blake Plateau was occupied from February 11 to 17, 1985. Hole 627B penetrated 536 m of sediment with 65% recovery. The hole was abandoned in dolomite and gypsum of Albian age because of shows of wet gas (methane with traces of ethane through hexane). Hole 627B recovered the following sequence:

I. 0-181 m BSF. Carbonate coze with turbidites, slumps and debris flows, Pleistocene to early Miccene in age. These represent the toe of the prograding Little Bahama Bank.

.

II. 181-247 m BSF. Condensed sequence of argillaceous carbonate ooze and chalk with some chert, early Miocene to Paleocene in age. | |

III. 247-325 m BSF. Nannofossil chalk without platform input and negligible dissolution effects, Campanian in age.

IV. 325-353 m BSF. Condensed sequence of ooze, chalk and chert, Santonian to middle Cenomanian in age.

. ii

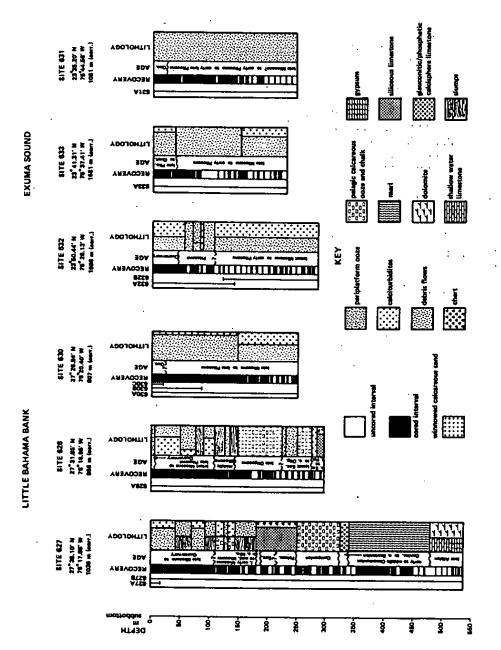


Fig. 3 "Shallow objective," slope transect sites, Leg 101.

V. 353-468 m BSF. Marl and argillaceous chalk, early Cenomanian to latest Albian? in age, deepens upward from inner neritic to outer neritic environments.

VI. 468-536 m BSF. Shallow water dolomites, limestones and gypsum, late Albian in age. Platform interior environment.

SITE 628 (27° 31.65' N, 78° 18.95' W, Water Depth 959 m) - Site 628 on the northern slope of Little Bahama Bank was occupied from February 17 to 19, 1985. Hole 628A penetrated 298 m of sediment with the HPC/XCB technique. Overall recovery was 73%. The hole was terminated in nannofossil coze of late Paleocene age. From top to bottom, the following sequence was recovered:

I. 0-137 m BSF. Carbonate coze with turbidites, slumps and debris flows.

II. 137-270 m BSF. Carbonate coze and chalk with slumps and turbidites, late Oligocene to latest Eccene in age.

III. 270-298 m BSF. Siliceous chalk and limestone, some carbonate ooze, middle Eocene to late Paleocene in age.

SITE 629 (27° 24.40' N, 78° 22.10' W, Water Depth 546 m) -Site 62 on the upper part of the northern slope of Little Bahama Bank was occupied from February 19 to 20, 1985. Hole 629A represents an attempt to spud-in at the proposed Site BAH-7A. Approximately 16.5 m of sediment were penetrated with the HPC/XCB technique before hard layers halted further drilling. The material recovered consists of sandy carbonate ooze, lime sand and rubble, and fragments of friable limestone, all of late Quaternary age.

SITE 630 (27° 26.90' N, 78° 20.40' W, Water Depth 800 m) - Site 630 was occupied on February 20 and 21, 1985. Three holes were drilled. Hole 630A penetrated 250 m of sediment with HPC/XCB, with a recovery of 88%. Hole 630B duplicated the top 80 m with HPC, recovery 99%. Hole 630C took a third core of the mudline (8 m, 100% recovery).

Site 630 represents the upper end of the slope transect off Little Bahama Bank. It is located at the crest of an interfluve, whereas sand and rubble from the platform bypass this zone in turbidity currents that are confined to the gullies. The stratigraphic section consists of:

I. 0-124 m BSF. Periplatform carbonate ooze (with abundant bank-derived aragonite), late Miocene to Recent.

II. 124-250 m BSF. Periplatform coze and chalk with turbidites, late Miccene in age.

SITE 631 (23° 35.20' N, 75° 44.60' W, Water Depth 1081 m) Site 631 in Exuma Sound was occupied on February 23 and 24, 1985. One hole was drilled and a total of 244 m of sediment were penetrated with HPC/XCB, with 65% recovery.

Site 631 represents the upper end of the slope transect in Exuma Sound. It is located on a 1600 m high slope with a declivity of 10-12 degrees (as compared to 900 m height and 2-3 degrees at Site 630). The following sequence was penetrated:

I. 0-97 m BSF. Periplatform carbonate ooze with some chalk, alternations of greenish, organic-rich and white, lean intervals, strong odor of hydrogen sulfide, early Pliocene to Recent in age.

II. 97-244 m BSF. Chalk with some coze, rich in bank-derived aragonite, pyrite and odor of hydrogen sufide, Miccene/Oligocene to early Plicene.

SITE 632 (23° 50.40° N, 75° 26.10° W, Water Depth 1996 m) - Site 632 in Exuma Sound was occupied from February 25 through 28, 1985. Two holes were drilled. Hole 632A penetrated 140.0 m with 59% recovery using the HPC/XCB system. Hole 632B was drilled with a rotary bit to 283 m, with 21% recovery in the cored interval of this hole (120.7-283.3 m BSF).

Site 632 represents the basinward end of the Exuma Sound transect and is located on flat basin floor just above the axial valley of Exuma Sound. The stratigraphic sequence consists of the following units:

- I. 0-54 m BSF. Periplatform coze with turbidites of largely platform material, late Pliceene to Holocene in age.
- II. 54-104 m BSF. Periplatform coze and chalk with a few turbidites and a 7 meter thick debris flow, late Miccene to late Plicene in age.
- III. 104-283 m BSF. Periplatform chalk and limestone with rhythmic intercalations of turbidites, late Miocene in age (this unit probably includes significant amounts of ooze that were not recovered).
 - SITE 633 (23° 41.30° N, 75° 37.60° W, Water Depth 1681 m) Site 633 at the toe-of-slope in Bonna Sound was occupied March 1 and 2, 1985. Only one hole was drilled, to a total depth of 227 m BSF with HPC/XCB, with 48.78

recovery. The following stratigraphic sequence was recovered:

- 1. 0-52 m BSF. Periplatform ooze with thin turbidites, late Pliocene to Holocene in age.
- II. 52-142 m BSF. Soupy periplatform ooze with limestone clasts, stiff ooze/chalk, few turbidites, late Miocene (?) to Pliocene.
- III. 142-227 m BSF. Periplatform chalk and limestone with turbidites, late Miccene.
- SITE 634 (25° 23.01' N, 77° 18.88' W, Water Depth 2761 m) -Site 634 in Northwest Providence Channel was occupied from March 3 through 8, 1985. Hole 634A penetrated to 479 m with a rotary bit. The interval from 4-144 m BSF was washed because the site is less than 500 m from DSDP Site 98. Recovery in the cored intervals was 5.8%. Site 634 was an attempt to deepen DSDP Site 98 to the mid-Cretaceous platform. The site was abandoned above this target because of poor hole conditions. The following sequence was penetrated:
- I. 0-4 m BSF. Periplatform ooze with some chalk and hardgrounds, late Pliocene to Pleistocene in age.

II. 4-144 m BSF. Washed.

- III. 144-182 m BSF. Nannofossil chalk with chert nodules, late Paleocene to early Eccene in age.
- IV. 182-479 m BSF. Alternation of nannofossil chalk and detrital limestones with some chert. Limestones consist of skeletal grainstones and rudstones, interpreted as turbidites, and of breccias with peb-

ble-sized clasts of shallow-water limestones in chalk matrix, tentatively interpreted as debris flows; proportions of these lithologies are poorly known because of low recovery. Age is early to late Campanian.

SITES 635/636 (Hole 635A: 25° 25.10' N, 77° 19.90' W, Water Depth 3348 m; Hole 635B: 25° 25.20' N, 77° 18.30' W, Water Depth 3573 m) - Sites 635 and 636 in the Northeast Providence Channel (a branch of Great Bahama Canyon) were occupied from March 10 through 13, 1985. Hole 635A represents an unsuccessful attempt to spud in. The successful Hole 635B is located further upslope, 2.5 km east of Site 635. Site 636 could not be spudded in either.

Hole 635B recovered the following sequence:

- I. 0-2.3 m BSF. Calcareous ooze and foram-pteropod sand, late Pleistocene to Holocene in age.
- II. 2.3-61 m BSF. Calcareous coze and chalk of Pliocene and Pleistocene age with detrital limestones and chalk (debris flows and turbidites?) of Cenomanian/Turonian age. No orderly succession of ages were observed, and no disturbed contacts between different lithologies.
- III. 61-118 m BSF. Slightly argillaceous chalk and limestone with alternations of dark, organic-rich and light, carbonate-rich intervals. Intercalations of muddy debris flows, slump folds, late Albian in age.

Major Results - Leg 101 answered many questions, but left others still requiring further study. The presence of a drowned mid-

Cretaceous "megabank" in the northern Straits of Florida/southern Blake Plateau seems reasonable based upon results from Site 626 and 627, but the drowning process may have been diachronous, as indicated by a comparison of results at Sites 627 and 635.

"Highstand shedding" by carbonate platforms is supported by
the Leg 101 slope transects, particularly in Exuma Sound. Bypassing is an important process
on both the gentle slopes of Little Bahama Bank or the steeper
slopes of Exuma Sound, but rates
of deposition remain high even on
the steep slopes. These high
rates support both rapid lithification and burial of organic
matter.

The shipboard science party for Leg 101 were:

J. Austin, Jr., Co-chief Scientist (Univ. Texas, Austin); W. Schlager, Co-chief Scientist (Univ. Miami); A. Palmer, Staff Scientist (ODP/TAMU); P. Comet (U.K.); A. Droxler (Univ. Miami); G. Eberli (Switzerland); E. Fourcade (France); R. Freeman-Lynde (Univ. Georgia); C. Fulthorpe (Northwestern Univ.); G. Harwood (U.K.); G. Kuhn (F.R.G.); D. Lavoie (NSTL, MS); M. Leckie (WHOI); A. Melillo (Rutgers Univ.); A. Moore (Marathon Oil Co.); H. Mullins (Syracuse Univ.); C. Ravenne (France); W. Sager (TAMU); P. Swart (Univ. Miami); J. Verbeek (Netherlands); D. Watkins (Univ. Nebraska); C. Williams (LDGO).

B. IEG 102: DSDP/ODP SITE 418A

Leg 102 was planned to reenter one of two deep basement holes (417D or 418A) drilled previously on Deep Sea Drilling Project Legs 51-53 in 110 m.y. crust in the Western Atlantic (Figure 4). These sites, plus Site 395 and 396, were drilled as part of a basement age transect. The prime objective of Leg 102 was to acquire a comprehensive baseline suite of borehole geophysical data in old oceanic crust. No rock or sediment sampling was envisaged.

SITE 418A (25° 02.10' N, 68° 03.44' W, Water Depth 5511 m) -JOIDES RESOLUTION returned to Hole 418A, which had been drilled on DSDP Legs 52 and 53 through pillow basalts, massive basalts and into the top of the dike transition zone to a sub-basement depth of 544 m. The hole was thought to have a logging tool lodged in the overlying sediments. After re-entering the hole it was found that extensive bridges had developed in the uncased sediments during the interim, but that the tool was not in fact lodged in the hole. This leg eventually succeeded in re-opening the hole to total depth (6379.5 m below sea level, 868 mbelow sea floor, 5454 m sub-basement) for further experiments and drilling.

During Leg 102 fourteen separate logging runs were conducted in the hole with eleven separate tools (Table 1). Three of the tools had never been run before in a marine environment: the USGS susceptibility tool, the German 3-axis magnetometer, and the packer instrument.

Two-ship seismic experiments were conducted using the RV FRED MOORE as a shooting ship, and placing a 3-component geophone clamped sequentially at five different depths in the basalt section of Hole 418A. An oblique seismic experiment was conducted

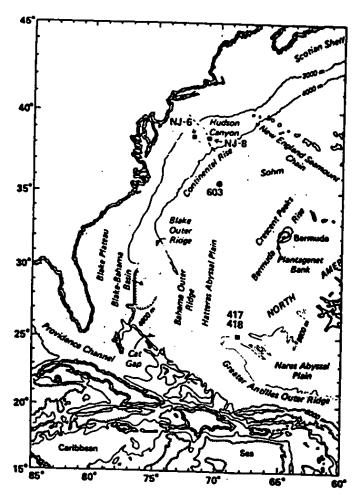


Fig. 4 Location of Site 418 and unoccupied Leg 102 alternate sites.

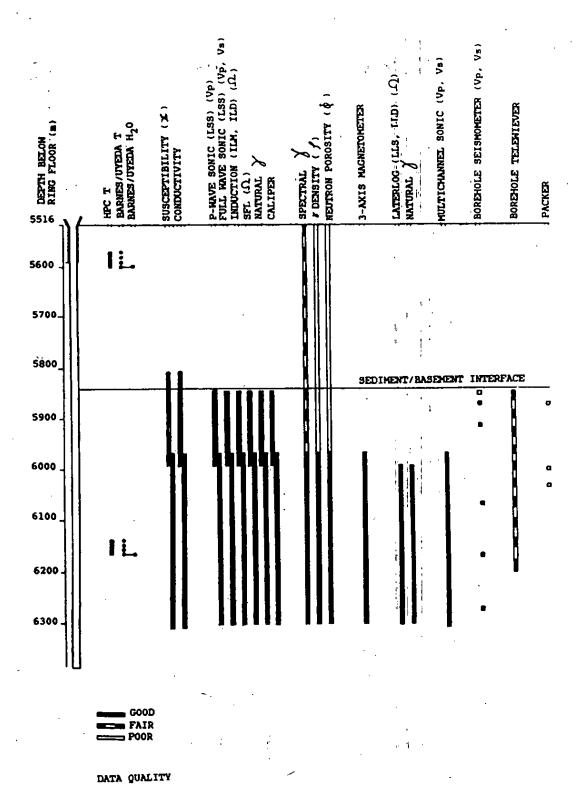


Table 1: Leg 102 downhole logging locations, Hole 418A.

1 4

with shot points along radial lines and circles centered at the borehole, to a maximum radius of 8 km. A closely-spaced seismic reflection survey was also made in this area to obtain basement topographic corrections, and a long-range sonobuoy survey was made around the site to look for deeper layers.

Major Results - Preliminary interpretations of the borehole geophysical and geochemical data suggest that the old crust at this site has been sealed by alteration products (clays and carbonates) within the pillow basalt units and between layers of pillow and massive basalt, so restricting the movement of pore water and causing Layer 2A to be absent. Preliminary seismic results indicate that the old crust is anisotropic.

Drilling/Engineering - Leg 102 was an unusual voyage from the standpoint of drilling operations. At no time was a coring or drilling bit even attached to the drillstring. The operational success story, of course, was the reopening and cleaning of DSDP Hole 418A after eight years. The special wireline fishing spears developed for this project were not used, as it was found that the logging tool and cable had been lost outside the hole. The spears will remain onboard in case they are needed in the fu-

Early trials of the new Mesotech imaging sonar have been impressive. It will be a major improvement in making re-entries, and it promises to be useful in other situations that call for seafloor scanning. The performances of the heave compensator, the top drive, and the automatic station-keeping system on the first two legs have been particularly gratifying. Progress in turning the drillship and her crews into a functioning coring vessel has been rapid. The crews represent an exceptional pool of talent.

In the next few months, Drilling Operations will be working with Development Engineering on the new Navi-drill core barrel, on oriented hydraulic piston coring, and on bare-rock drilling systems. External television re-entry and improved through-bit logging capabilities are also being worked on.

The science party for Leg 102 were:

M. Salisbury, Co-chief Scientist (SIO); J. Scott, Co-chief Scientist (USGS, Denver); C. Auroux, Staff Scientist (ODP/TAMU); K. Becker (Univ. Miami); W. Bosum (F.R.G.); C. Broglia (LDGO); R. Carlson (TAMU); A. Fisher (Univ. Miami); J. Gieskes (SIO); M. Holmes (Florida State Univ.); H. Hoskins (WHOI); J. Legrand (France); D. Moos (LDGO); D. Rio (Italy); R. Stephen (WHOI); R. Wilkens (MIT).

CRUISE AT SEA

A. LEG 103: GALICIA MARGIN

Scientific objectives for the cruise include examining the history of rifting, subsidence, and sedimentation of the Galicia Margin and the relationship of these processes to the initiation and progressive opening of the adjacent North Atlantic. The results of this leg also will bear strongly on understanding the evolution of the more thickly sedimented and hence less acces-

sible conjugate margin of North

The JOIDES RESOLUTION departed Ponta Delgada, Azores on April 25, 1985 for Leg 103. At the time of this report, the ship is located at Site 637 (Galicia Site GAL-2B: 42°05' N, 12°51' W). Site 637 is planned as a single bit hole on a ridge at the continent/ocean boundary from which lherzolite was dredged previously (Figure 5). This hole should provide data on the petrologic nature of the ridge.

A second major site (GAL-4B) will be occupied during Leg 103. At this site a multiple re-entry hole will be cored which is expected to penetrate through post-, syn-, and pre-rift strata and into crystalline basement (Figure 5). In the event that this result is unattainable in Hole GAL-4B, the ship will attempt to recover the older sequence at GAL-4A. The results from the site, or combination of sites, should document the history of the margin, from the succession of rifting phases during the Mesozoic, through the drowning of the carbonate platform and the progressive or sudden changes in the environment during the initiation of sea floor spreading.

The science party aboard JOIDES RESOLUTION for Leg 103 consist of the following:

G. Boillot, Co-chief Scientist (France); E. Winterer, Co-chief Scientist (SIO); A. Meyer, Staff Scientist (ODP/TAMU); J. Applegate (Florida State Univ.); M. Baltuck (Tulane Univ.); J. Bergen (Florida State Univ.); M. Comas (Spain); T. Davies (Univ. Texas, Austin); K. Dunham (Univ. Michigan); C. Evans (Colgate Univ.);

J. Girardeau (France); J. Haggerty (Univ. Tulsa); L. Jansa (Canada); J. Johnson (Univ. California, Los Angeles); J. Kasahara (Japan); J-P. Loreau (France); M. Moullade (France); J. Ogg (SIO); M. Sarti (Italy); J. Thurow (F.R.G.); M. Williamson (Canada).

III. CRUISES PRESENTLY IN THE FINAL PLANNING STAGE

A. LEG 104: NORWEGIAN SEA

Drilling on the Voring Plateau is scheduled for Leg 104, departing from Bremerhaven on June 25 and returning to Stavanger, Norway on August 11, 1985. The drilling objectives are primarily to sample the dipping reflector sequence found under portions of the Norwegian margin and believed to be associated with early seafloor spreading and/or rifting. Drilling is projected to penetrate the dipping reflectors and into material forming an acoustically opaque basement defined by a sharp upper contact, Horizon K.

Coring at Site VOR-2A (Figure 6) will penetrate a maximum of 1000 m below sea floor into the dipping reflector sequence and will also recover the Cenozoic sediment cover for paleontologic and sedimentologic studies. Coring operations will utilize a newly developed drill tool, Navi-drill, which is expected to minimize time at this site. The Navi-drill is a downhole coring tool that uses the same bottomhole assembly as HPC/ XCB coring. It employs a mud motor to rotate its core barrel beyond the drillbit. In certain situations it could significantly save on time required to pull the drill string and initiate re-

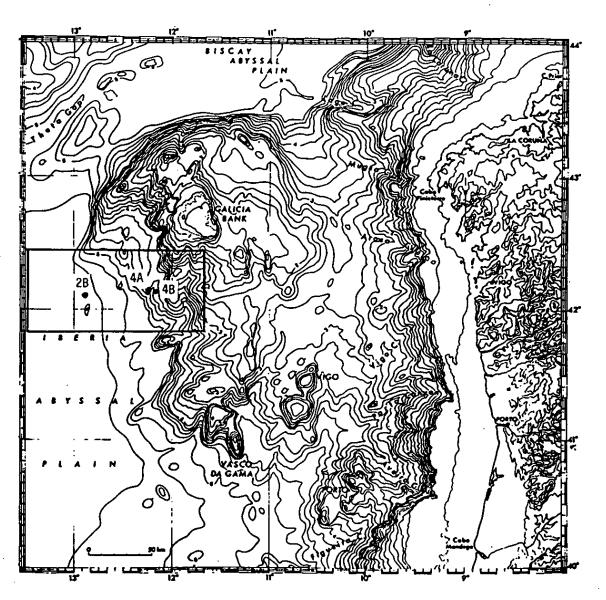


Fig. 5 Bathymetry of the continental margin northwest of the Iberian Peninsula, showing location of the Leg 103 drilling area and Sites 2B, 4A, and 4B. Bathymetric contours are in kilometers. Modified from Vanney et al., 1979.

144 416

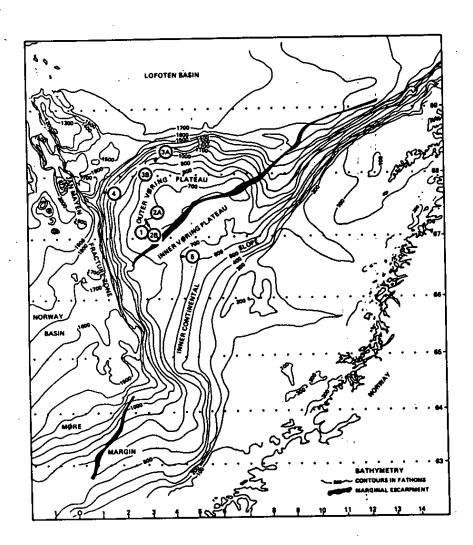


Fig. 6 Location of proposed drillsites for ODP Leg 104 operations in the Norwegian Sea (includes alternate sites VOR-1, VOR-3A, VOR-3B).

entry operations. Subsequent coring at VOR-2B is targeted at recovering the material across Horizon K. Logging operations will be carried out at both sites upon completion of coring.

Time allowing, Vertical Seismic Profile experiments at Sites VOR-2A and VOR-2B, and HPC coring of VOR-4 and VOR-5 will complement the work of Leg 104. HPC coring results are aimed at answering questions regarding pale-oceanography and paleoclimatology associated with glaciations and fluctuations of the Norwegian Current.

The Co-chief Scientists for Leg 104 are Dr. O. Eldholm (Norway) and Dr. J. Thiede (F.R.G.). Dr. E. Taylor will be the ODP/TAMU Staff Scientist and Mr. G. Foss the ODP/TAMU Operations Superintendent. Staffing for this leg is now complete and the Scientific Prospectus has been distributed to shipboard participants and panel members.

B. LEG 105: LABRADOR SEA AND BAFFIN BAY

The scientific objectives of Leg 105 are to document the climatic history, paleoceanographic history, age calibration of magnetic anomalies, and timing of the opening of the Labrador Sea and Baffin Bay. First priority is Site BB-3 (70°24' N, 64°55' W) (Figure 7), a re-entry site located on the lower rise of Baffin Bay. The Eocene to Quaternary

sedimentary sequence that we hope to recover should represent the first complete sediment record for this period from this latitude and will enhance studies of climatic and paleoceanographic relationships between middle and high latitudes.

The second site proposed for Leg 105 is Site LA-5 (58°3' N, 48024' W) located southwest of Eirik Ridge, a sediment drift in the east-central Labrador Sea. The scientific objectives at this site are to document the Eocene to Holocene paleoceanographic and paleoclimatic history of this region. Additional sites are proposed in case weather or ice conditions disallow coring operations to commence or be completed at the first two sites. Secondary sites include Site LA-2 (58°30' N, 57°54' W) and LA-9 (53019' N, 45014' W). The objectives at these sites would be similar to those at Sites BB-3 and LA-5.

IV. SCIENCE SERVICES REPORT

The Gulf Coast Repository is under construction (at TAMU) and will be ready to receive materials in late 1986. Cores collected by the Ocean Drilling Program from the Pacific and Indian Oceans and the Red Sea will be housed at the Gulf Coast Repository. Interstitial water, gas and frozen organic geochemistry samples collected by ODP will be stored at the Gulf Coast Repository.

李马克 "手事故"

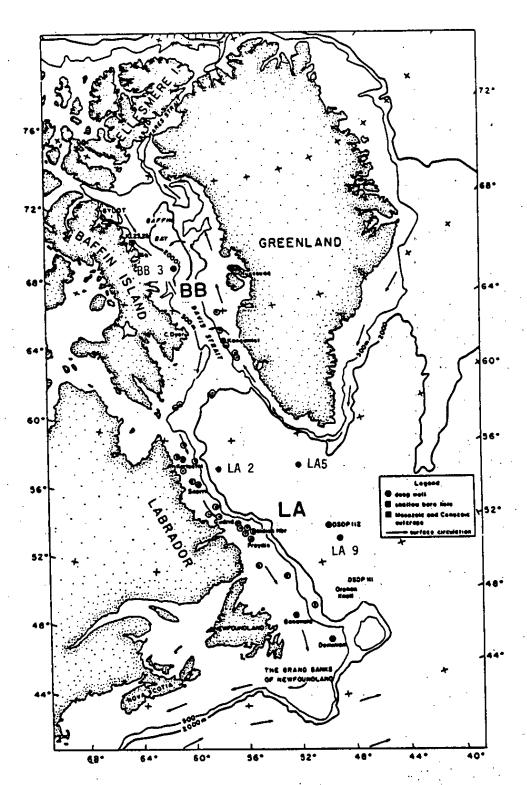


Fig. 7 Location of proposed Labrador Sea and Baffin Bay ODP Sites.

JOIDES COMMITTEE REPORTS

PLANNING COMMITTEE REPORT

10-12 APRIL 1985

The following paragraphs are highlights of presentations from the 10-12 April 1985 Planning Committee Meeting held in Norfolk, Virginia.

The Science Operator reported that staffing for Leg 104 (Norwegian Sea) has been completed with J. Thiede and O. Eldholm selected as co-chief scientists. Selections for Leg 105 (Baffin Bay/Labrador Sea) will be made at the end of May with S. Srivastava and M. Arthur as the co-chief scientists.

The site survey for Leg 106 (MARK I) is presently scheduled for May 1985 and pre-cruise plans are proceeding accordingly. Discussions have been held with Southern International concerning the drilling operations and a conference between the co-chiefs (Honnorez and Detrick) for Leg 106 and Southern International will combine drilling operations with science objectives. Presently, bare rock spud in plans are based on a mud motor/drill pipe design that reduces the effects of fatigue and compression during drilling operations and predicts a very stable configuration.

Based on their best estimates for drilling and recovery rates of the scientific objectives for Leg 103, the Science Operator indicated that an additional 7 days was needed for that leg. The Action Committee of the PCOM recommended that 5 days be added to Leg 103 at the expense of 5 days from Leg 102 (W. North Atlantic). This action led to the abandoning of the scientific objectives at DSDP Site 603. It was then recommended by the PCOM that an additional 2 days could be saved by drilling for the objec-

tives of Sites 4A and 4B at one location.

SHORT-TERM PLANNING

Legs 104 and 105

Legs 104 and 105 were considered by the PCOM as a single package because decisions based on weather constraints on Leg 105 would impact planning for Leg 104.

At the Austin PCOM meeting in January, Leg 104 was assigned 47 total days, 41 of which were designated for drilling. At that time, the PCOM also requested that the drillship depart Stavanger, Norway no later than 15 August 1985. The Science Operator developed drilling time estimates and found it difficult to achieve the proposed cruise objectives within the 47 day time frame. Therefore at this meeting, the Science Operator requested that an additional 8 days would be neccessary in order to achieve those objectives and would increase the leg to 55 days. The 8 days, it was suggested, would be found by delaying the Stavanger departure date for Leg 105 from 15 August to 23 August and from time leftover from Leg 102. The PCOM rejected the proposed change but stated that Leg 104 (Norwegian Sea) include as first priority objectives drilling at VOR 2A to resolve the nature of dipping reflectors leaving the co-chief scientists the freedom to decide when to stop drilling 2A and dedicate the remainder of the 40 working days of the leg to either resolve the dipping reflectors at VOR 2B or to go to Site 4 to pursue paleoenvironmental objectives.

During discussion, it was mentioned that the 8 day delay at

the beginning of Leg 105 in combination with the present arrival date in St. John's, Canada of late October/early November could possibly affect the achievement of cruise objectives. It was therefore suggested by some members of PCOM that the cruise time for Leg 105 be increased to 70 days. However, the Science Operator had indicated at the January PCOM meeting that for a number of reasons a 70 day leg was not feasible.

Although a number of options for drilling based on 60-day and 62.5-day legs had been discussed between the Science Operator and the Co-chief scientists, PCOM agreed that every effort should be made to reach the original objectives at Baffin Bay (BB-3B) and Labrador Sea (LA-5) sites, which will require a 70-day leg.

PCOM advised the Science Operator to schedule the departure date so to not compromise the original objectives of the drilling plan (i.e. 25 days for basement drilling at BB-3 and 25 days for basement drilling at IA-5) and to finish in St. John's by the end of October.

INTERMEDIATE SHORT TERM PLANNING

Nominations and discussions were held concerning the selection of co-chief scientists for Legs 107-111.

Leg 107 (Tyrrhenian Sea) - PCOM agreed the following co-chief nominations as advice to the Science Operator: J. Mascle, K. Kastens. Also nominated were M. Cita, W. Ryan, J-P Rehault, R. Thunell.

Leg 108 (NW Africa) - M. Sarnthein and W. Ruddiman were nominated as co-chiefs by the ARP and SOHP.

PCOM accepted these nominations and passed them to the Science Operator, advising him to leave sufficient time for ARP and SOHP to make further nominations in the advent that they decline the invitation.

Leg 109 (MARK II) - T. Juteau and W. Bryan are the co-chief scientists.

Leg 110 (Barbados N.) - PCOM nominated the following possible cochiefs: C. Moore and A. Mascle with alternates J. Ladd, W. Bryant and M. Marlow.

Leg 111 (EPR Drilling) - It was the consensus of PCOM that H. Bougault and K. Macdonald be invited as co-chief scientists with alternates: Batiza, Becker, Francheteau, Langmuir, Natland, Thompson, Von Herzen.

Leg 113 (Chile Triple Junction)-It was moved by the PCOM to remove the Chile TJ from the current ship's schedule due to logistical and not scientific issues.

LONG TERM PLANNING

A summary of each panel's priorities for Indian Ocean drilling is presented below:

TECP, Mar. 18-20, 1985	Score
Makran	8.75
Intraplate Deformation	8.43
SW Indian Ridge Petrology Bengal-Indus Fans	7.00
90° East Ridge-Broken Ridge Hot Spot	6.50
Broken Ridge, Uplift and Rifting	6.43
Chagos-Laccadive Hot Spot	
N. Somali Basin Deep Hole	6.25
Kerguelen Basement	

Red Sea	6.20
S. Australia Quiet Zone	6.00
Timor Collision	5.62
S. Australia, Old Ocean Crust	5.50

IOP, Mar. 20-22, 1985	Score
Kerguelen, One Leg	9.50
90° East Ridge Hot Spot and Paleoceanography	8.25
Neogene Package	8.00
Red Sea	7.63
SE Indian Ridge Transect	7.38
Broken Ridge, Uplift & Rift	6.88
Kerguelen, Second Leg	
Exmouth-Argo Transect	6.75
Intraplate Deformation	6.25
Davie Ridge	5.00
SW Indian Ridge Petrology	4.88
Chagos-Laccadive Hot Spot and Paleoceanography	4.63
Makran	4.50

LITHP, Feb. 26-27, 1985

Red Sea

(Hot Spot Trace) *

Cold Spot

SW Indian Ridge Petrology

(Crozet Basin) **

Carlsberg Ridge

*If a good program is formulated.

**If technical problems are solved.

SORP, Feb. 21-23, 1985

Kerguelen-Amery Transect

Neogene Package

N. Somali Basin Deep Hole

Kerguelen-SE Indian Ridge Transect

Exmouth-Argo Transect

Chagos-Laccadive Paleoceanography

Subantarctic Transect

SOP, Apr. 9, 1985 letter from Kennett

Kerguelen-Amery Transect
Subantarctic Transect
Kerguelen-SE Indian Ridge Transect
Adelie Land Coast
SW Indian Ridge Petrology
Agulhas Plateau
Cold Spot



EXECUTIVE COMMITTEE REPORT

18-19 MARCH 1985

The following paragraphs are selected highlights from the final minutes of March EXCOM meeting held in Miami, Fla.

J. Knauss, Chairman, convened the 18-19 March, 1985 meeting of the JOIDES Executive Committee. A. Berman, Univ. of Miami EXCOM representative, welcomed meeting attendees.

The meeting was held under the terms of membership as described by a resolution (Motion 311) passed at the October 1984 EXCOM meeting in Narragansett, RI. The motion, known as the Narragansett Resolution, states that:

"The EXCOM recognizes that the Ocean Drilling Program is scheduled to begin its operational phase on 5 January 1985. At that time, JOIDES membership will consist of those countries which have a regular member MOU agreement with NSF. Further, those countries who have made a commitment to NSF to join ODP in the future will be given observer status on the EXCOM and PCOM.

Scientists from non-JOIDES countries which were formerly candidate member countries will no longer be members of PCOM and panels after 5 January 1985, but they shall be eligible for reappointment. PCOM should consider at its April meeting the completion of membership of panels, including scientists from all countries."

As a result of this resolution, only those countries with full memberships were seated at the table. Japan was given observer status and was also seated at the table. Full members are France, the Federal Republic of Germany and Canada.

The Chairman congratulated Canada on deciding to join ODP as a full member and welcomed W. Hutchison (Canadian EXCOM representative) and M. Keene to the meeting. Also, Knauss congratulated Japan for their commitment to join ODP as a full member on October 1, 1985 and welcomed K. Kobayashi as an observer to the meeting.

For this occasion, the Chairman also extended special guest invitations to J. Bowman (U.K.), J. Stel, B. Munsch, and D. Spearman (ESF) and K. Crook (Australia). The Chairman encouraged the special guests to continue their efforts to achieve full membership in the Ocean Drilling Program.

NATIONAL SCIENCE FOUNDATION REPORT

S. Toye (NSF) reported that the Director of NSF, the Office of Science Technology and Policy and a number of supporting congressional committees are very pleased that the Ocean Drilling Program has entered into its operational stage. Toye noted that ODP has had the support of the Office of Science Technology and Policy as well as the support of key members in the U.S. Congress and in non-U.S. governmental agencies. There is also strong support for ODP in the Ocean Sciences Section of the NSF.

The Ocean Sciences Section at NSF has been reorganized into 2 co-equal segments. They are the Ocean Sciences Research Section headed by Robert Wall and the Oceanographic Centers and

Facilities Section (OCFS) headed by Sandra Toye. OCFS includes all of the activities formerly included in the Oceanographic Facilities and Support program (OFS) plus the ODP and new activities in Ocean Engineering and Oceanographic Technology. Toye emphasized that for budget presentation purposes, ODP and OFS remain as separate line items. This means that funds cannot be moved between the accounts without Congressional approval.

Toye will continue to represent the NSF at the JOIDES EXCOM, and as Section Head, will continue to be responsible for the international aspects of the ODP. Program activities within the ODP will reside with G. Brass. A. Sutherland will be in charge of contractual and technical aspects of the program.

This reorganization is the result of an effort to elevate within the U.S. government the international aspects of ODP and to separate the U.S. activities in drilling from international drilling activities.

The proposed budget for FY 86 is presently in Congress. Approximate contributions are as follows:

\$28,850,000 U.S.-ODP 12,500,000 International-ODP \$41,350,000 Total for Drilling-related Activities

The U.S. funds are divided into:

\$19.00 million ODP-U.S. 2.50 million DSDP 7.35 million USSAC \$28.85 million

Due to the structure of the national budgetary system, the

NSF appropriation is a section of a larger omnibus bill with the Dept. of Housing and Urban Development, NASA and other independent federal agencies. Therefore, the NSF appropriation is vulnerable as a result of problems with other members of the bill. However, NSF was not slated for a budgetary decrease in FY 86 and appears headed for a slight increase in funding.

Membership News

Japan

Japan's commitment of full membership in ODP helps to satisfy the budgetary needs of the program. Presently, active negotiations concerning the details of the 10-year agreement are being conducted with the Ministry of Science and Culture. A signing ceremony may occur at the next EXCOM meeting in June.

Canada

The Canadian government's decision to enter ODP as a full member will result in a signing ceremony in Washington, DC around 15 April 1985.

United Kingdom

J. Bowman commented that presently, the U.K. has 50-60% of a contribution and is actively seeking to convert that amount to a full membership. However, the near future does not look promising. Factors such as a 3% annual decrease for the next 10 years in the science budget in combination with the exchange rate situation have made it difficult for the U.K. to purchase a full membership at this time.

European Science Foundation

D. Spearman stated that the ESF sends an enthusiastic message of strong commitment and hope to return to ODP as a full member. Presently, ESF needs one outside partner having 40-50% membership. At this time, that requirement has not been met. However, negotiations are occurring with Australia and a firm decision may occur as early as June or at the latest in August. It also appears that a union with the U.K. may be a possibility. This is an appropriate arrangement as the U.K. is a member of the European Science Foundation.

Despite the exchange rate situation, the ESF is confident that 50-60% of a full membership may be obtained. Several members of the ESF consortium have expressed a commitment to raise their individual contributions and in one instance, an ESF member has tripled its contribution.

In closing, Spearman stated that the ESF requests additional time to resolve the membership issue and also requests that they be given a status in the program. These requests were made in order to assure ESF of continuity in ODP. It is generally feared throughout ESF that if the continuity is broken, the consortium may be disrupted.

Consensus: The issue of ESF and U.K. participation needs further discussion at this meeting. The EXCOM should examine opportunities that create an interim membership arrangement for the U.K. and ESF which accommodates the continuity matter, but at the

same time deals fairly with those countries that have already made full commitments to CDP.

A subcommittee of the EXCOM, composed of the 3 non-U.S. full members and 1 U.S. member met to discuss and develop a resolution concerning the involvement of the ESF and U.K. in the ODP.

The following resolution was drafted by the subcomittee and presented to EXCOM where it was moved upon and seconded by Maxwell:

MOTION: The JOIDES Executive Committee expresses its appreciation and admiration for the United Kingdom's long history of oceanographic research and for its active and vital participation as a charter member of the International Phase of Ocean Drilling.

The Executive Committee is conscious of and sensitive to the current difficulties faced by the United Kingdom in attempting to join the Ocean Drilling Program, and urges the United Kingdom to increase its efforts to join the program.

It is the position of the Executive Committee, that entry of the United Kingdom to the Ocean Drilling Program other than as a full member would be neither appropriate nor in the best interest of the Program or of the other full members. This position is justified by the size of the United Kingdom's relevant scientific community, its economic stature, and the level of its prior involvement in scientific ocean drilling.

The Ocean Drilling Program has now commenced virtually on schedule, within budget, and with a vastly improved scientific capability. For the Program to proceed and reach its full

potential as planned, the Executive Committee urges the United Kingdom to become a full member by October 1985.

Vote: for $\underline{13}$, against $\underline{0}$, abstain $\underline{0}$.

USSR

The issue of participation by the USSR in ODP raises problems in the U.S. in the areas of licensing and technology transfer. These mainly result from the advanced nature of the drillship. The USSR presently maintains informal contacts with the program through the I.U.G.S. and through scientist to scientist interaction. Membership of the USSR will require complete agreement among EXCOM members and inclusion should not occur on less than a full membership basis. Some official discussion in the U.S. has taken place on the membership matter but no decision has been reached. EXCOM was reminded that because of the layout of the ship, there is no way to restrict the use of technology.

SCIENCE OPERATOR REPORT

The following paragraphs are summary highlights of the Science Operator Report which was presented to the EXCOM. Please note that the results of Legs 101-102 and the status of Legs 103-105 are found in the ODP Science Operator Report section of this issue of the JOIDES Journal. Results from the logging experiments are presented in the Wireline Logging Services Report of this meeting.

P. Rabinowitz, ODP/TAMU, reported that the results from the shakedown cruise (Leg 100) were very encouraging as all

systems worked well. The purpose of Leg 100 was to conduct tests of the dynamic positioning system, to test the drilling and coring equipment (e.g. rotary, APC, XCB, heave compensator), to test the scientific instruments in the labs and to train the science, technical and drilling crews. Drilling resulted in holes at ODP Site 625 which yielded calcareous ooze of Pliocene-Pleistocene (approximately 1.6 m.y. old) age and at BAH-1, to test the re-entry objectives. In the Florida Straits area, Leg 100 made an unsuccessful attempt to gather information for Leg 101. At this site, the drill string could not be used due to a combination of shallow depths and strong current conditions that created strumming problems with the drill pipe.

The bare rock drilling program is on schedule as proposals are out for the TV system and the technique for lowering the camera has been proven by the deep water mining industry. On the Leg 102B, the transit leg, the high resolution downpipe sonar and the cage will be tested. The base structure will be fabricated in Halifax, NS and will be picked up after Leg 105 is completed. For further information on technical developments and the plan for drilling on Leg 106, please refer to the Science Operators Report from the Jan. 8-11, 1985 PCOM meeting held in Austin, Tex.

At the end of the Science Operator Report, P. Rabinowitz announced that at the end of March, A. McLerran will begin his second retirement. EXCOM proposed the following resolution to express its appreciation and to wish McLerran well.

MOTION: EXCOM recognizes the considerable impact of Mr. Archie McLerran in the successful start of the Ocean Drilling Program and his numerous contributions to ocean drilling technology. We wish him well in his second retirement and thank him for being willing to help us when we needed him the most.

Vote: for $\underline{13}$, against $\underline{0}$, abstain $\underline{0}$.

JOINT OCEANOGRAPHIC INSTITUTIONS INC. REPORT

J. Baker, President of JOI Inc., began his report by congratulating TAMU for readying the ship and sending it to sea within the time constraints. Baker also congratulated LDGO for the development of state-of-the-art logging activities, the JOIDES committee for lab design and equipment, the former EXCOM Chairman A. Berman, and the former PCOM Chairman J. Honnorez, under whose leadership the ODP took shape during the interim period.

Baker stated that the funding problems of the U.K. and cash-flow problems from different national fiscal years have resulted in a \$2.2 million budget shortfall that must be made up internally (i.e. from JOI funding and the subcontracts to TAMU and LDGO) for FY 85. However, the budget can be arranged so that the shortfall can be absorbed without major impacts to the program by:

 The lower than expected day rate charge during the Leg 100 shakedown

- Deferring a number of items into the FY 86 budget
- Trimming some internal operations.

By deferring important JOI and high priority JOIDES items into FY 86 and later, the program will have sufficient funds to do the high quality of science proposal and to achieve COSOD, objectives. JOI also is attempting to work within the limits of the present budget in order to avoid any major impact to the Program (i.e. eliminating bare rock drilling or deferring it to another year). JOI agreed that the possible elimination or deferral of bare rock drilling would not occur at this time.

Discussion of the ODP budget shortfall centered on the development, by JOI, of a series of scenarios with implications to the program. It was stressed that in order to manage the program on a sound financial basis JOIDES planners must know how much funding is available and that a dialogue must exist between management and the JOIDES community. However, various members of EXCOM disagreed with the idea by indicating that planning will not be improved by such an exercise and usually such exercises are not beneficial. Baker indicated that JOI had already investigated a number of scenarios and their implications and the result was that there were no program reductions planned at this time.

WIRELINE LOGGING SERVICES OPERATOR REPORT

R. Anderson reported that all the Schlumberger and ODP speciality tools, computers, and other equipment are onboard the RESOLUTION and are fully operational.

LEG 101 SUMMARY

At Site 627, the first open hole logging site, the hole caved in on the nuclear combination tool during routine logging activities . The tool was severed at the rig floor and attempts at fishing for the tool were unsuccessful. The hole was cemented in and abandoned. The Schlumberger commitment to ODP is best exemplified by the rapid response (10 days) with which the array of tools was replaced. These tools were taken off a Shell oil rig that is working in the Gulf of Mexico and transported by boat to the RESOLUTION which at that time was working in Exuma Sound. The remainder of the leg was very successful in spite of difficult drilling conditions, every hole was frequently filled with sand due to cave-ins. One logging run was lost as the core barrel could not be retrieved from the pipe. The logging program proved a success due to the gamma spectroscopy logging tool. This noncommercial tool, a nuclear accelerator (Minitron) is on loan to ODP from Schlumberger and recorded a number of firsts during its operation. It has never been run in pure seawater, in drill pipe, in collars and in a situation where the data was available to the public. This situation provided a better set of logs than were ever produced by CHALLENGER.

Site 634 experienced numerous cave-ins with the drill string becoming stuck when rotation stopped. The problem was solved by placing the drill

string approximately 50 m above the bottom of the hole, heaving a 300 m logging interval, placing a wiper on top of the block which enabled circulating water to be pumped through the tool and routinely rotating the pipe. The logging tool remained in the drill case and the lower portion of the hole (lower 80 m) was logged through 2-inch steel casing. The result proved to be spectacular. The standard set of logging runs measures calcium, iron, chlorine, silicon, hydrogen, sulfur, gamma rays and a quality factor. The data from tool yielded synthetic curves that determined lithology with depth. The chemical logging data was converted to density and velocity curves which were then transformed into impedance data. From the impedance, synthetic VSP seimograms were produced which were compared to actual seismic section at the drill site. Results from this exercise proved very favorable as synthetic reflectors and multiples crosscorrelated with actual records. In order to verify the use of this technique at other locations, a hole is now needed that has actual sonic and VSP data in order to confirm/calibrate the chemical logs. Also we need to ground-truth the relative percentages of chemical elements in the well with XRF/XRD measurements made on the cores. These results have excited Schlumberger enough that the tool will be again available for Leg 103. The tool which is presently commercially unavailable will probably be on consignment to ODP from Schlumberger at some reduced level beginning in FY 86, beginning with Leg 106. The tool will probably be available on Legs 103, 104, and 105 on a no-cost basis because Schlumberger will also benefit from these field

programs. Beginning with Leg 103, every tool must have at least 24 hours of use scheduled before Schlumberger will loan it to ODP at no cost.

The remainder of the downhole logging tools scheduled for use on Leg 101 were not deployed because of the unstable nature of the drill holes.

LEG 102 SUMMARY

For Leg 102, Schlumberger has provided three specialty tools that were ordered by the co-chief scientists. They are the Tracer Ejection Tool (TET) which measures flow rates, the tool also includes temperature and pore water samplers. In addition the entire suite of LDGO logging tools is onboard with two 12-channel VSP tools and two borehole televiewers. However due to tight financial constraints within the LDGO bore hole group and the fact that the TET and one VSP are additional items to our contact with Schlumberger, there will be an additional amount charged per day to total program costs. The end result is the TET and the VSP will only be available for this leg and no others because there are presently no funds available to pay for their use on future legs. The other VSP has been borrowed from the U.S. Navy. Two of each tool are required for a standard logging program.

The logging program has been asked to reduce its FY 85 program budget by 7%. Presently LDGP has expended a good portion of its FY 85 appropriation. The program can continue to deliver services for the remainder of the fiscal year, even with the loss of downhole tools. The tool loss should

not affect the insurance premium t however, another disaster ma? greatly affect our operating bud J get. The budget for FY 86 is already very constricted with items deferred from FY 84. Logging services requires at least 3 of each tool in order to provide a safety net for logging services. The third tool originally scheduled as part of the FY 86 budget has been eliminated and replaced with the second of these tools. Again, Wireline Logging Services is confident that services comparable to any in the world can be delivered.

MEMBER COUNTRY REPORTS

FEDERAL REPUBLIC OF GERMANY

H. Beiersdorf reported that the exchange rate presents some problems but does not endanger present program participation. The research vessel, SONNE, is now collecting site survey data in Australian waters together with BMR participants. Work has been completed in the Lau Basin in the SW Pacific. Investigators found evidence of a spreading center with recently extruded basalt and hydrothermal deposits located in the back arc region. The SONNE also visited the NE edge of the Manahiki Plateau in order to examine volcaniclastic sediments (200 m thickness) that are continuous from DSDP Hole 317 on the plateau to a distance of 200 km north.

France

B. Biju-Duval reported that in FY 85-86 CNRS increased the amount of funding for scientists. Increases in funding are also expected from the Committee on

Petroleum and Mines. Finally, IFREMER has also contributed support by providing funding as well as ship time. The total of French support to ODP will be approximately 5 million francs. Difficulties are expected in FY 86-87 and many programs may be deferred. These problems are the result of the exchange rate and not the quality of the program.

France has scheduled a number of regional site surveys. One ship is scheduled to conduct Tyrrhenian Sea MCS site surveys in the Mediterranean. CHARCOT recently accomplished a site survey in the China Sea using Seabeam and high resolution seismic surveying. Current plans call for ending the 1985 campaign by conducting regional site surveys in the South Pacific. surveys will be followed by an MCS survey in 1987. Surveys of the Chile Triple Junction have been proposed but presently there are no definite plans. In 1986, a one-month site survey cruise is planned in the Indian Ocean. The proposal to conduct the survey has been submitted but has not yet been approved.

There will also be increased submersible activity in the future. France presently has the capability to dive to 6000 m. A program is planned in June-July 1985 in conjunction with Japan and in 1987, there are plans to dive in the Atlantic on the Galicia Bank. The decisions on the dive program for 1986 will occur in June 1985.

IFREMER is working with WHOI and TAMU in the development of the fly-in re-entry system. Plans also include using a submersible to locate a re-entry cone in conjunction with the re-entry system.

The French scientific community is planning a conference to discuss results of the French involvement during the IPOD phase of DSDP.

Canada

W. Hutchison reported that the Department of Energy, Mines and Resources together with the Ministry of State for Science and Technology and Environment of Canada have developed a mechanism for funding Canada's involvement in ODP. An ODP-like council has been established to promote government to government interaction. A Canadian national committee for ODP will be put in place which will embody the Canadian Geoscience Council. This will establish the Canadian EXCOM and PCOM representatives and a secretariat. Presently we will continue the ad hoc group that is responsible for Canada's entry into ODP. The group is composed of W. Hutchison as President, M.

Keene as Vice-President, and J. Malpas as Secretary.

The only questionable element concerning Canada's involvement in ODP is the possible lack of sufficient numbers of marine geoscientists to fully participate. We would like to address this problem by stimulating interest in marine geosciences in Canada through the involvement of graduate students and cooperation with non-Canadian members of the worldwide scientific community.

Leg 105 (Baffin Bay/Labrador Sea) is of prime interest to Canada and to a lesser extent Leg 106. The only problem foreseen for Leg 105 is locating a scout vessel for iceberg patrol.

In closing, Hutchison thanked all parties in the U.S. for their support during the discussion of membership.

Japan

K. Kobayashi reported that Japan is pleased to be headed for a full membership in ODP. The Japanese government decided to enter ODP for the FY period of April 85-March 86.

Long-term plans call for a joint French/Japanese program using the CHARCOT. Further plans include a site survey/dive program to be conducted in the Japan Sea. Many regional site surveys in the Southern Ocean and Bonin arc areas are also planned. Proposals to conduct these surveys will be submitted to PCOM by late May 85. In the near future, plans call for the development of down hole measuring instruments.

Japan expressed concern over the public relations aspects of ODP. This concern is based on the current ship schedule that has the RESOLUTION visit the NW Pacific in 1989. At that time Japan will have been an ODP member for 4 years before the drill ship is seen by the Japanese public. Japan requested that video programs or other materials be distributed to Japan in order to publicise ODP.

PLANNING COMMITTEE REPORT

R. Larson, PCOM Chairman, reported that the PCOM's high priority items are the scheduling of the Weddell Sea Leg and the Baffin Bay Leg. PCOM's concern was that the Weddell Sea Leg start no later than 1 January 1987 and that Baffin Bay/Labrador

Sea start no later than 15 August 85. To accommodate these dates, Leg 102 was initially shortened by 18 days and later an additional 5 days to get to Baffin Bay/Labrador Sea in August. Leg 103 is now locked in on the schedule with no anticipated changes in length or scientific objectives. Legs 104-106 are still in the preliminary planning stages with Leg 105 being the most difficult to plan. Difficulties for 105 lie in the ice problem in Baffin Bay and the weather problem in Labrador Sea. PCOM has asked the science operator to increase the length of the leg to 70 days.

Pacific Drilling

The future of drilling at the Chile Triple Junction is site survey dependent. Proposals to conduct site surveys have been submitted by the U.S. and France. However, it looks as though the French proposal may fall through. The decision to include Chile TJ will be made at the April PCOM meeting. It should be noted that alternatives exist if Chile TJ is eliminated from the schedule.

Plans presently call for one leg of Weddell Sea Drilling in January/February 1987. Plans then call for 1.5 years of drilling in the Indian Ocean after Weddell Sea drilling and prior to drilling on the Western Pacific active island arcs. The IOP and SOP should provide PCOM with a prioritized listing of objectives for that time period. Again in this region, weather is a problem.

The highest objective is the Kerguelen Plateau area with drilling being planned in the austral summer of 1987-88. This plan contrasts with the objectives in

the NW Indian Ocean and the June-September monsoon season. Plans may call for drilling in the Red Sea during that weather period. There is international support from France, Germany, Japan and Australia for drilling in the Red Sea.

LONGER-RANGE PLANNING/COSOD OBJECTIVES

The PCOM stated that in regard to the first 2 years of ODP, the objectives found in the COSOD report are indeed being addressed with the exception of the deep hole into Layer 3. LITHP has been asked to respond to the issue with possible trade-offs with shallower objectives. In short, planning to date is in accordance with these objectives.

The PCOM considered riser drilling after the first circumnavigation by the RESOLUTION. The feeling was that this issue needs years of advanced planning with very high priorities in order to make the program viable in terms of objectives that would be sacrificed. Drilling would probably occur after 1991.

PANEL STRUCTURE

All previous Working Groups are presently disbanded with the exception of the Mediterranean Working Group which has requested one more meeting to formulate a drilling program to be presented at the PCOM in Germany.

A Red Sea Working Group was formed at the January 1985 PCOM. This Working Group will report to the IOP on a drilling campaign. The philosophy in the member selection process was that the

international rules were suspended and only the most knowledgeable people for the slots were selected.

The rotation of panel members was also changed at the last PCOM. The present procedure is found in the PCOM Motion (518) below:

The appropriate lines of the 1984 Terms of Reference shall be replaced with "panelists appointed in 1985 and in the future will serve 3 years; one-third of the panelists will be replaced each year."

PARTICIPATION OF SCIENTISTS FROM DEVELOPING COUNTRIES

R. Larson commented that at the Austin PCOM this issue was raised in response to an EXCOM request. Discussion of the matter focused on two different situations. The PCOM agreed that where possible, scientists from developing countries should be invited on a personal level and ODP-like organizations should be contacted (on a formal and informal basis). Secondly, the ODP application for clearance to drill in non-U.S. waters includes an invitation for scientists of that country to participate in. drilling activities scheduled for that particular leg.

Consensus: The EXCOM agrees with the position taken by PCOM on the participation of scientists from developing countries. Further, in order to fully address the matter the EXCOM would like a variety of different approaches to be investigated.

PUBLIC RELATIONS/PUBLICITY FOR ODP

R. Larson introduced a paper prepared by T. Mayer of the JOIDES Office. Mayer reported that at the end of January 1985, JOI convened a meeting in Miami to specifically discuss portcalls but which also covered other aspects of public relations. With regard to port-calls and visits to the JOIDES RESOLUTION, the principle was established that invitations to tour the drillship should originate from TAMU/ODP only. It was expected that a local institution wishing to host an on-shore activity would be responsible only for the invitations to the on-shore activities.

At the following port-calls, opportunities exist for JOIDES-member countries to stage open days:

Bremerhaven (FRG): approximately 20-25 June 1985

St. John's, Newfoundland (Canada): approximately 12-16 October 1985

Marseilles (France): approximately 2-6 February 1986

An open day is being planned for the Norfolk, Virginia port-call to enable senior officials from NSF and other agencies, Congressional members and staff and embassy officials an opportunity to see the JOIDES RESOLUTION.

Exhibition material is being prepared for a JOI booth at the annual convention of the American Association of Petroleum Geologists to be held in New Orleans at the end of March 1985. This material can be used for subse-

quent exhibitions and open days on the RESOLUTION.

Copies of the JOI Public Release of Information statement for subcontractors were circulated among EXCOM members at the close of the report.

OTHER BUSINESS

As part of his address to EXCOM, Erich Bloch (Director of NSF), encouraged ODP to examine the possibility of including university (graduate and undergraduate) as well as high school students to be a part of the seagoing program. Bloch also encouraged ODP to include high school science teachers in the participation process. It was suggested that JOI investigate these possibilities.

The EXCOM also considered and approved a JOIDES pennant designed at the URI JOIDES Office. The pennant emphasizes the thematic objectives of the COSOD Report and will be flown on the RESOLUTION.



PLANNING COMMITTEE REPORT

8-11 JANUARY 1985

The following paragraphs are summary highlights of the Final Minutes.

R. Larson, Planning Committee Chairman, convened the 8-11 January 1985 meeting held in Austin, Texas. A. Maxwell, Univ. of Texas EXCOM representative and R. Buffler, Univ. of Texas PCOM representative, welcomed meeting participants.

NATIONAL SCIENCE FOUNDATION REPORT

The Oceanography section of NSF has undergone internal reorganization. S. Toye has been moved to head the Ocean Facilities Section but will continue to handle the international affairs of ODP. ODP has been moved to the Ocean Facilities Section with G. Brass as the program director and A. Sutherland as the associate director.

Budget Reductions

The reductions proposed in the FY 86 budget mildly affected programs sponsored by NSF. Programs on the average were reduced by 1.5% and the ODP budget was not at all affected.

Membership News

On December 28, 1984 Canada announced plans to join ODP as a full member.

EXECUTIVE COMMITTEE REPORT

R. Larson reported on the results of the 15-17 October 1984 EXCOM meeting held in Narragansett, R.I.

The EXCOM moved that the name of the drillship, SEDCO/BP 471, be informally known as the JOIDES RESOLUTION. This designation would be known as the non-legal name of the ship but it is hoped that it will become the preferred name through usage.

Further it was the concensus of EXCOM that co-mingled funds not be used to fund site surveys. Funding of site surveys is regarded as an international issue but not one to be solved with co-mingled funding. However, the door was left open for discussion at a later date.

EXCOM recognized in a motion that as of the sailing date of Leg 101, JOIDES membership would consist of those countries with a regular MOU agreement with NSF for full membership. The motion further stated that scientists from non-JOIDES countries which were formerly candidate member countries would no longer be members of PCOM and panels after the sailing date but remain eligible for reappointment to panels.

SCIENCE OPERATOR REPORT

The following paragraphs are selected highlights of the report presented to the PCOM.

Bare Rock Spud-in Development

S. Serocki (ODP/TAMU) reported on the technical developments in hard rock drilling and the plan for drilling on Leg 106.

The system to be used on Leg 106 will use a re-entry cone guidebase that is 20 ft. sq. and 12 ft. high and will have a television/sonar system mounted on a frame near the end of the drill

pipe. The frame can be loosely latched around the pipe and made to travel vertically using a cable. A vibrator isolation design protects the camera and other instrumentation. The guidebase will be filled with cement after being lowered on the drill pipe and slings. The guidebase will be fitted with acoustic inclinometers to detect the dip of the underlying morphology. If excessive slopes are encountered on "set-down" then the guidebase can be relocated.

SEDCO has evaluated a number of designs and firmly recommended the gravity "box" guidebase concept. Southern International (SI) will be responsible for the hole drilling program, in terms of procedures and drilling hardware. SI has proven expertise in hard rock drilling and a track record in scientific drilling.

The spud-in procedure consists of using an 18 in. bit with an in-line motor to drill downhole the initial 50-60 ft. If the terrain proves to be unstable, then a cement plug will be set, drilled out and 16 in. casing will be set, provided that the hole is stabilized. Also an 11 3/4 in. casing string will be available for use.

Planned drillstring improvements include six cone core bits and newly designed core catchers. It is anticipated that coring rates in the hardest of materials will be approximately 8 ft./hr.

Under the present schedule, the design of the guidebase will be completed by May 1985. At this time, completion is also expected concerning the specifications for the guidebase, TV and other instrument designs. The TV system will be largely off the shelf and

the TV frame will be similar to one used by ESSO.

WIRELINE LOGGING SERVICES CONTRACTOR REPORT

D. Moos reported on LDGO wireline logging activities.

All currently available specialty logging tools (the 12 channel sonic tool and the analog borehole televiewer) have been acquired, tested and are ready for deployment on the drillship. Development of the digital borehole televiewer by Stanford Univ./WBK Mining Inst. (W. Germany)/USGS is progressing with a prototype model ready for testing by mid-1985. Much of the software programming for data acquisition and analysis has already been completed at Stanford.

After several meetings with Schlumberger Offshore, NSF, JOI and two outside experts in heave compensation, it was decided to proceed with the Schumberger prototype design for the ODP wireline heave compensator. In addition, Dr. Dana Yoerger (WHOI-MIT) has been hired to do a numerical analysis of the Schlumberger design. This analysis will assist in the development of details and application of control loop and microprocessor comparators.

Testing of Schlumberger standard tools took place in the USGS test hole in Denver during December, 1984. Specialty logging tools and logging acquisition and analysis programs were successfully tested in the LDGO borehole and the Ramapo Fault borehole in November, 1984.

The LDGO Borehole Research Group completed FY 84 within its allotted budget and is currently planning the budget for the FY 86 Program Plan.

SHORT TERM PLANNING

Leg 103 (Galicia Bank):

The operations plan for Leg 103 call for initially drilling one single-bit hole at the foot of the Galicia Bank margin along a ridge of possible lherzolite composition and 2 single-bit holes (4A and 4B) on faulted and tilted continental basement. Site 4A would be located in post-rift sediments of abbreviated thicknesses that directly overlie prerift rocks and Site 4B would be located in a thicker post-rift section that overlies syn-rift sediments. Additional information on Leg 103 is in the Scientific Prospectus for Leg 103 and in the ODP Science Operators Report sections of this issue of the JOIDES Journal.

Members of the PCOM were uncertain as to what would be accomplished by drilling a ridge whose composition is based on a single dredge sample of lherzolite. Several members remarked that the importance of drilling the Galicia margin is to sample pre-rift, syn-rift and post-rift sediments. After extensive debate, PCOM decided only to give quidance concerning drilling priorities and extended a 7 day time limit for drilling one single-bit hole on the ridge. The POOM further decided that the ship would then proceed to set a cone at Site 4B and drill to 1300 m into post-rift and syn-rift sediments. The ship would then drill until bit destruction a single-bit hole in the post-rift sediments and pre-rift basement near Site 4A. With any remaining time, the PCOM suggested that the co-chief scientists should decide either to go back to the ridge or to Site 3A which is located on a tilted continental block or to return to Site 4B.

Leg 105 (Baffin Bay/Labrador Sea):

Additional information on Leg 105 can be found in the ODP Science Operators Report.

L. Garrison (ODP/TAMU) presented ice forecast data for the Baffin Bay area which indicated that the operational weather window for the area is between September through mid-October. Garrison also indicated that during this time period, icebergs and sea flows track through the drill site at an average rate of 26-28/month which suggests that on occasion, the RESOLUTION may have to disconnect from the drill string in order to avoid icebergs. Because of this probability, it may be necessary for a scout vessel to be on station in order to locate and monitor iceberg movement. Garrison noted that the major concern of the Science Operator in these conditions is that be sufficient time to disconnect from the drillstring in order to avoid icebergs.

Information on the ice cover, from government forecasting services, indicates that Sites BB-3 and BB-1 are 80% covered in early August, 50% covered by late August and less than 50% covered after late August (in eastern areas). Data from 1982 indicate that ice free conditions occurred by 24 August, in 1984 the area was clear by 8 August and in 1983 the area was iced over all year. Garrison indicated that this information combines to suggest

that the operations window is very uncertain. However if a window opens, statistics suggest a time frame of 25 August to 22 October.

At LA-9 and LA-5, weather data indicate that between 1 October and 1 November there is a decrease in the amount of snow, rain and sea surface temperature. However at this time a freezing sea is not a problem. Also during this time period, winds average 44 km/hr, significant wave heights range from 2-6 m and wave periods are between 6-9 sec. Storms also average 4/month during Oct.-Nov. and peak within a 12 hr. period during any 2-3 day storm.

It was the collective feeling of PCOM that Labrador Sea/ Baffin Bay drilling is very important and therefore in order to assure success in the area addi- . tional time is needed in the region (see consensus below). Based on the weather data, members indicated that the RESOLU-TION should leave Stavanger in early August in order to have sufficient time to conduct cruise objectives (see consensus below). PCOM members also noted that in order for drilling to begin in early January 1987 additional time must be included into the Operations Schedule (see consensus! below). After discussion, it was suggested that additional time could be found by trimming Leg: 102 (see consensus below).

Consensus: Leg 114 (Weddell Sea) should commence no late than 1 January 1987.

Consensus: The departure date from Stavanger for Leg 105 (Baffin Bay/Labrador Sea) should be set no later than 15 August 1985.

Consensus: It is agreed that Leg 102 should be shortened by 18 days to accommodate the above changes.

Consensus: Retain 417/418 programs on Leg 102 and that portion of Site 603 (single hole with logging) minus the Mesozoic objectives that can be done without setting a re-entry cone. The program will wash down to 1 km and take a couple of days to conduct logging experiments.

It was the consensus of PCOM that Leg 101 contain 41 operating days, Leg 103 contain 42 operating days and Leg 104 contain 41 operating days. Leg 105 will be extended to 70 days if the Science Operator will allow and Site LA-9 will be drilled as a contingency hole (single-bit) rather than Site LA-5 as a reentry hole.

PCOM closed the discussion by passing the following motion:

Motion: The consensus listed above should constitute formal PCOM advice to the Science Operator.

Vote: 14 for, 0 against, 0 abstain (1 absent)

Problems Associated with Pacific Drilling

During the meeting, France indicated that it is willing to conduct a Seabeam survey of the eastern Pacific from 44-48 degrees S using the JEAN CHARCOT with emphasis on the proposed drilling area if the U.S. will conduct a MCS survey of the area before mid-1986. The French PCOM representative requested a decision on the proposal in order than scheduling arrangements

could be completed. During discussion it was noted that the earliest a non-French ship would be in the area is 1987.

There was an agreement among PCOM members that the East Pacific Rise, Peru Margin and Chile Triple Junction should be kept in the operations schedule at this time. It was further agreed that the options for the Chile TJ site survey should be kept open and vigorously pursued. It was suggested that the options be discussed again in April at the regular PCOM meeting.

LONGER TERM PLANNING

A summary of Indian Ocean objectives there were based on panel priorities was presented:

The PCOM grouped those objectives that were commonly rated by the panels, noting that all panels did not rate the Indian Ocean objectives equally among their respective overall priorities. There was a feeling among some PCOM members that the proponents should be given a chance to compete against each other and the outcome of that competition would constitute proposed objectives for the Indian Ocean. PCOM did note that for planning purposes l leg will be dedicated to drilling in the Kerguelen area. The general feeling the committee was summarized in the following consensus:

Consensus: Recognizing that some panels state that their present list of priorities is preliminary, the panels are advised to each develop a prioritized listing of drilling targets for the

IOP LITHP TECP * SOHP SOP

Kerguelen Red Sea Makran Kerquelen Kerguelen-Antart. Neogene 90 E. Ridge Red Sea Oman/Owen F.Z. Ind. Sub-Ant. Cha-Lac-Masc Kerguelen Somali Bas. Argo Cold Spot Sunda Arc S.E. Ind. R. Red Sea Fracture S. Aust. Margin Chag-Lac-Masc Central Ind. Oc. Broken R. zones NW Australian Makran Timor Collision Argo Cha-Lac-Masc Australia (Falvey) S.E. Indian R.

* The priorities of the Tectonics Panel were revised soon after this meeting and should be read as follows:

1. Makran 8.78 (7-10)

90 E. Ridge N. Somali Bas. Central Ind. Basin

- 2. Red Sea (Ross and Bonatti proposal) 8.30 (5-10)
- 3. Red Sea (Cochran and Hobart proposal) 8.22 (6-10)
- 4. Kerguelen- SORP 8.16 (7-10)
- 5. Sumatra 7.5 (6-10)
- 6. So. Australia (Cande and Mutter proposal) 7.4 (5-9)
- 7. Intraplate deformation- Central I.O. 7.22 (3-10)
- 8. Timor collision 7.2 (5-10)
- 9. So. Australia (Falvey et al. proposal) 7.0 (5-9)

Indian Ocean with legs and options to be presented at the next PCOM meeting as a major agenda item.

Consensus: The thematic and regional panels are to be advised that approximately 1.5 years years of scientific drilling in and proximal to the Indian Ocean will occur after drilling in the Weddell Sea and prior to drilling in the island arcs of the west Pacific.

Publicity for Longer-Range Planning:

It was agreed that the general outline of drilling as presented by PCOM should be publicized as widely as possible in order to encourage proposals and also to indicate to proponents the planning time scale adopted by PCOM. The JOIDES Office was asked to prepare a news item for publication in EOS, Geotimes, AAPG Explorer and other appropriate journals.

REVIEW OF COSOD OBJECTIVES

PCOM reviewed the proposed overall drilling program in light of the objectives in the COSOD Report and considered that the program as planned seems in accord with regard to items emphasized in the COSOD document. It was noted that only the first two years of drilling have been planned and that at least one circumnavigation of the oceans was needed in order to fully achieve COSOD objectives.

One of the objectives mentioned in the COSOD Report was that at least one deep hole be drilled to study lower Layer 2 and upper Layer 3 ocean crust problems. The PCOM agreed that

LITHP should be consulted concerning this matter and asked to make recommendations to PCOM. The Science Operator was also asked to investigate engineering requirements for such a deep hole.

Riser drilling was considered in terms of margin drilling and for deep crustal penetration. Discussion indicated that planning and site survey requirements for riser drilling need a lead time of approximately 4 years. However, discussion also indicated that the earliest time for riser drilling would be in the early 1990's. The round of discussion ended with the following consensus:

Consensus: PCOM agreed to ask the Panels to consider riser drilling in terms of scientific possibilities and priorities. Panels should consider a year of riser drilling (possibly 1992) in which only 3-4 holes will be drilled in water depths of less than 6000 ft. and preferably less than 4000 ft.

INCLUSION OF SCIENTISTS FROM DEVELOPING COUNTRIES

PCOM stated that whenever possible, scientists from developing countries should be invited to participate in ODP. It was suggested that invitations could extended on a personal level or formally/informally through ODP-like organizations. PCOM also asked the panels to explore opportunities for scientific collaboration with non-ODP members.

It should also be noted that the ODP application for clearance to drill in non-U.S. waters includes an invitation for scientists of that country to participate in drilling activities during that particular leg.

ODP SHIPBOARD SCIENTISTS PUBLICATIONS POLICY

PCOM voted to accept the publications policy previously used by DSDP with the following underlined amendment:

"Any publication of results other than in ODP reports within 12 months of completion of the cruise must be approved and authored by the whole shipboard party and, where appropriate, shorebased investigators. After twelve months, individual investigators may submit related papers for open publication provided they have already submitted and had accepted their contributions to the ODP reports. Investigations which are not completed in time for inclusion in the ODP reports for a specific cruise may be published in a later edition of the ODP reports; however, they may not appear in another journal until the report for which they were intended has been published."

Vote: 14 for, 0 against, 0 abstain (1 absent)



SAMPLE DISTRIBUTION POLICY

Distribution of Ocean Drilling Program and of Deep Sea Drilling Project samples is undertaken in order to (1) provide support to shipboard scientists in achieving the scientific objectives of their cruise and to support shorebased investigators who are preparing contributions to ODP reports; (2) provide individual investigators with materials to conduct detailed studies beyond the scope of ODP reports; (3) provide paleontological reference centers with samples for reference and comparison purposes; and (4) provide educators with samples for teaching purposes.

Funding for sample-related activities must be secured by the investigator independently of requesting the samples.

The Ocean Drilling Program Curator is responsible for distributing samples and for preserving and conserving core material. The Curator, who may accept advice from chairmen of the appropriate JOIDES advisory panels, is responsible for enforcing the provisions of this sample distribution policy. He is responsible for maintaining a record of all samples that have been distributed, both onboard ship and subsequently from the repositories, indicating the recipients and the nature of investigations proposed. This information is available to interested investigators on request.

Every sample distributed from the ship or from a repository is labeled with a standard identifier, which includes leg number, hole number, core and section numbers, and interval within the section from which the

sample was removed. It is imperative that this standard identifier be associated with all data reported in the literature, and that residues of the sample remain labeled throughout their lives, so that later workers can relate the data to the cores.

Distribution of sample materials is made directly from the repositories (Lamont-Doherty Geological Observatory, Scripps Institution of Oceanography, or Texas A&M University) by the Curator or his designated representative.

1. Distribution of Samples for Research Leading to Contributions to ODP Reports

Any investigator who wishes to contribute to the reports of a scheduled cruise may write to the Curator, Ocean Drilling Program, P.O. Drawer GK, College Station, TX 77841, USA, in order to request samples from that cruise. Requests for a specific cruise must be received by the Curator at least TWO MONTHS in advance of the departure of that cruise, in order to allow time for review of the request in conjunction with other requests, so that a suitable shipboard sampling program can be assembled. The request should include a statement of the nature of the proposed research, size and approximate number of samples required to complete the study, and any particular sampling technique or equipment which may be required. Requests will be reviewed by the staff representative and co-chief scientists of the cruise and by the Curator. Approval/disapproval will be based upon the scientific requirements of the cruise as determined by the appropriate JOIDES advisory panel(s). The scope of a request must be such that samples can be processed, that proposed research can be completed, and that the paper can be written in time for submission to the relevant ODP cruise report.

Except for rare, specific instances involving ephemeral properties, the total volume of samples removed during a cruise-related sampling program will not exceed one-quarter of the volume of core recovered, and no interval will be depleted. One-half of all recovered materials will be retained in the archives in as pristine a condition as is practicable. Investigators requesting shipboard samples of igneous materials may receive a maximum of 100 igneous samples per cruise.

Because many sample requests are received for shipboard work and because the time of the shipboard party is at a premium, cochief scientists are strongly urged to limit shipboard sampling to the minimum necessary to accomplish the cruise objectives. Shorebased investigators whose requests for cruise-related samples are approved should expect that they will receive the samples after the cores are returned to the repository, and should schedule research activities accordingly.

Co-chief scientists may invite investigators who are not cruise participants to perform special studies of selected core samples in direct support of shipboard activities. If this occurs, the names and addresses of these investigators and details of all samples loaned or distributed to them must be forwarded to the Curator, via the ODP Staff Representative to that cruise, immediately after the cruise.

These investigators are expected to contribute to the cruise reports as though they had been cruise participants. All requirements of the Sample Distribution Policy apply.

Any publication of results other than in ODP reports within twelve (12) months of completion of the cruise must be approved and authored by the whole shipboard party and, where appropriate, shorebased investigators. After twelve months, individual investigators may submit related papers for open publication provided they have already submitted and had accepted their contributions to the ODP reports. Investigations which are not completed in time for inclusion in the ODP reports for a specific cruise may be published in a later edition of the ODP reports; however, they may not appear in another journal until the report for which they were intended has been published.

2. <u>Distribution of Samples for</u> Research Leading to Publication Outside of the ODP Reports

A. Researchers who wish to use samples for studies beyond the scope of the ODP reports should obtain sample request forms from the Curator, Ocean Drilling Program, P.O. Drawer GK, College Station, TX 77841, USA. Requestors are required to specify the quantities and intervals of core required, to make a clear statement of the nature of the proposed research, to state the time which will be required to complete the work and to submit results for publication, and to specify funding status and the availability of equipment and space for the research.

Additionally, if the requestor has received samples from ODP or from DSDP previously, he/ she will be required to account for the disposition of those samples by citing published works, six (6) copies of which must be sent to the Curator. If no report has been published, this requirement can be fulfilled by sending a brief (two or three page) report of the status of the research. Unused and residual samples should be returned and data should be sent to the Curator if the project has terminated. Paleontological materials may be returned either to the Curator at ODP or to one of the designated paleontological reference centers. If material is returned to a reference center, notify the Curator when it is sent.

Requests for samples from researchers in industrial laboratories will be honored in the same manner as those from academic organizations. Industrial investigators have the same obligations as other investigators to publish all results promptly in the open literature and to provide the Curator with copies of all reports published and of all data acquired in their research.

In order to ensure that all requests for highly desirable but limited samples can be considered together, approval of requests and distribution of samples will be delayed until twelve (12) months after completion of the cruise or two (2) months after official publication of the core descriptions, whichever occurs earlier. The only exceptions to this policy will be made for specific requests involving ephemeral properties. Requests for samples may be based on core descriptions published in ODP reports produced by the shipboard party,

copies of which are on file at various institutions throughout the world. Copies of original core logs and data are kept on open file at ODP, and at the repositories at Lamont-Doherty Geological Observatory and at Scripps Institution of Oceanography.

B. Most investigations can be accomplished handily with sample volumes of 10 ml or less. Investigators must provide explicit justification of requests for larger sample sizes or for frequent intervals within a core. Requests which exceed reasonable size or frequency limits will require more time to process, and are unlikely to be granted in their entirety.

Requests for samples from thin layers, from stratigraphically-important boundaries or from sections which are badly depleted or in unusually high demand may be delayed in order to coordinate requests from several investigators or while the Curator seeks advice from the community. Investigators who submit such requests may expect to receive suggestions for alternative . sampling programs or that they join a research consortium which will share the samples. In any event, such exceptional requests will require more time for processing than will more routine requests.

Investigators who wish to study ephemeral properties may request a waiver of the twelvemonth waiting period; however, such requests will be referred automatically to the relevant co-chiefs. If approved, the investigator will join the shorebased contributors to the shipboard science effort, and

will incur the obligations thereof (see Section 1).

- C. Samples will not be provided until the requestor assures the Curator that funding for the proposed research is available or unnecessary. If a sample request is dependent in any way upon proposed funding, the Curator is prepared to provide the proposed funding organization with information on the availability (or potential availability) of suitable samples.
- <u>D.</u> Investigators who receive samples incur the following obligations:
- 1) To publish significant results promptly: however, no contribution may be submitted for publication prior to twelve (12) months following the termination of the relevant leg unless it is approved and authored by the entire shipboard party.
- 2) To acknowledge in all publications that the samples were supplied through the assistance of the international Ocean Drilling Program and others as appropriate.
- 3) To submit six (6) copies of reprints of all published works to the Curator, ocean Drilling Program, P.O. Drawer GK, College Station, TX 77841, USA. These reprints will be distributed to the repositories, to the ship, the National Science Foundation, and to the Curator's reprint file. All reprints received will be logged in an on-line bibliographic data base.
- 4) To submit all final analytical data obtained from the samples to Data Base Manager, Ocean Drilling Program, P.O.

Drawer GK, College Station, TX 77841, USA. Please consult announcements in the JOIDES Journal or call (409)845-2673 for information on acceptable data formats. Investigators should be aware that they may have other data obligations under NSF's Ocean Science Data Policy or under relevant policies of other funding agencies which require submission of data to national data centers.

5) To return all unused or residual samples, in good conditions and with a detailed explanation of any processing they may have experienced, upon termination of the proposed research. In particular, all thin sections and smear slides manufactured onboard the vessel or in the repositories are to be returned to the Curator. Paleontological materials may be returned either to the Curator at ODP or to one of the designated paleontological reference centers.

Failure to honor these obligations will prejudice future applications for samples.

Cores are available for examination by interested parties at the repositories. Investigators are welcome to visit the repositories in order to inspect cores and to specify sample locations when that is required for their research; however, time and space in the workrooms are limited, so advance appointments are required. Occasionally, the space may be fully booked several weeks in advance, so investigators are urged to call for appointments well ahead in order to avoid disappointment. Only the Curator or his delegate may actually remove samples from the

<u>F.</u> A reference library of thin sections, smear slides and archive photographs is maintained in the repositories for the use of visiting investigators. All thin sections and smear slides produced onboard the ship or in the repositories belong to this library.

3. <u>Distribution of samples to</u> Paleontological Reference Centers

As a separate and special category of repository activity, selected samples are being distributed to paleontological reference centers, where the prepared material may be studied by visitors. Foraminifera and calcareous nannofossils can be viewed; Radiolaria and Diatoms will be prepared in the future. The present centers are Scripps Institution of Oceanography, La Jolla, CA (W.R. Riedel, tel: 619-452-4386); Basel Natural History Museum, Switzerland (J.B. Saunders, tel: 061-25.82.82); and New Zealand Geological Survey, Lower Hutt, New Zealand (A.R. Edwards, tel: 699.059). Future centers are likely to include Texas A&M University, College Station, TX (S. Gartner, tel: 409-845-8479); Smithsonian Institution, Washington, DC: Lamont-Doherty Geological Observatory, Palisades, NY; and an as yet undesignated center in Japan.

Further details concerning the paleontological reference centers are reported periodically in the JOIDES Journal.

4. Distribution of Samples for Educational Purposes

Samples may be available in limited quantities to collegelevel educators for teaching purposes. Interested educators should request application forms from the Curator, Ocean Drilling Program, P.O. Drawer GK, College Station, TX 77841, USA. Requestors are required to specify preferred sample size and location, to make a very clear statement of the nature of the coursework in which the samples will be used, to explain how the samples will be prepared and how they will be used in the classroom, to explain in detail why they cannot use similar materials derived from outcrops or dredge hauls (It is NOT acceptable to argue that it requires less effort for the requestor to obtain samples from ODP than to assemble them from other sources!), and to certify that funds are available to prepare the materials for classroom use. In general, only samples of materials which are abundant in the collection and which are in little demand for research purposes should be requested for educational purposes. The Curator will not approve requests for materials which are limited in supply or for which demand (real or potential) is great, including most paleontological materials.

5. <u>Distribution of Data</u>

The Deep Sea Drilling Project and the Ocean Drilling Program routinely capture much of the data generated onboard ship and published in Program reports. Additionally, data supplied by investigators who have received samples are incorporated into the data bases, so data sets which are larger than can be published are available to investigators. Magnetics, downhole logging, seismic reflection, bathymetric data, and other data collected by the drilling vessel become available for distribution to investigators at the same time as core samples.

Requests for ODP data should be addressed to the Data Base Manager, Ocean Drilling Program, P.O. Drawer GK, College Station, TX 77841, USA. Many varieties of DSDP data will be included in ODP data bases. Information on sources of DSDP data will be available from the ODP Data Base Manager.

1. Name(s), office address and telephone number of investigator(s):

be employed in reviewing the sample request.

OCEAN DRILLING PROGRAM SAMPLE REQUEST

Please be aware of the current Sample Distribution Policy which is published in the letest issues of Initial Reports of the Deep See Drilling Project and in reports of the Ocean Drilling Program.

\cdot . \cdot	
	1
Purpose(s) of request. Please summarize the nature of the proposed research concisely in 5-7 lines, cluded in various official reports]. Provide a detailed description of the proposed research, including paration and analysis, roles of individual investigators, etc., on an attached sheet. The detailed despending the provided in paratic lines.	techniques of esmale are

3. List the samples requested on an ODP Sample Request Inventory, specifying in detail the precise location of such sample within the core to the nearest cm, and the sizes of samples which are the smallest required to support the research. Sample locations should be specified on the basis of the published lithological charts and descriptions which appear in the Initial Reports.

iource of Fi	arma.		•
	NSF:	Other (identify agency):	1
	Space:		 . 1

If funds, space or facilities now available are inedequate, how do you anticipate remedying the situation? If a sample request is dependent, wholly or partially, upon proposed funding from the National Science Foundation, the sample request and funding proposal must be considered together; therefore, it is important that the funding proposal be submitted at the same time as this request.

, ,

	If N: Prop	ISF funding is to be employed in the proposed research, please entroposal No, and percent of funding in that grant which%.	w the relevant NSF Grant No or NSF would be devoted to research on DSDP or ODP samples:
5.	Pless	se estimate the time it will require for you to obtain publishable resu	lts:
6.		what condition will the samples be once your research is complete? arch?	Will they be useful to others? If so, for what kinds of
7	resu enci	you have ever before received samples from DSDP or from ODP, ple ulted from each sample request. If you reference publications wh close six (8) reprints of each. If work is still in progress, please attach ase return the residues.	ich have not yet been forwarded to the Curator, please
8	, Plee	ese summarize any other information which you feel would be useful	in reviewing your request on an attached sheet.
	Acc	ceptance of samples implies willingness and responsibility on the part	of the investigator to fulfill certain obligations:
	(a)	To publish significent results promptly; however, no contribution may be sub- termination of the relevant leg unless it is approved and authored by the enti-	
	(b)	To acknowledge in all publications that the samples were supplied through others as appropriate.	the assistance of the international Ocean Orilling Program and
	(c)	To submit six (6) copies of reprints of all published works to the Curator, Texas 77843-3469, U.S.A. These reprints will be distributed to the report the Curator's reprint file.	Ocean Drilling Program, Texas A&M University, College Station, bitories, to the ship, to the National Science Foundation, and to
	(d)	To submit all final analytical data obtained from the samples to Data See: Station, Texas 77843-3469, U.S.A. Please consult recent issues of the JO data format. Investigators should be swere that they may have other de relevant policies of other funding agencies which require submission of data t	IDES journal or call 409-845-2673 for information on acceptable its obligations under NSF's Ocean Science Data Policy or under
	(e)	To return all unused or residual semples, in good condition and with a dat upon termination of the proposed research. In particular, all thin sections tories are to be returned to the Curator. Paleontological materials may be paleontological reference centers.	and smear slides manufactured onboard the vessel or in the repos-
	tt is w	understood that failure to honor these obligations will prejudica future	applications for samples.
		· .	
		•	
		Send completed forms to:	
		Cureter Ocean Drilling Program	Signatures of Investigators
		P.O. Drewer GK	Date:
		College Station, Texas. 77841	

*****Requestors are asked to be specific and answer <u>all</u> questions on the request form. Requestors must indicate the leg, hole, core, section, interval in centimeters measured from the top of each section, and specify sample volumes in cubic centimeters.

ODP SAMPLE REQUEST INVENTORY

Vame							Page	of
Date of I	Request_						Number of Samples Requested	
LEG	SITE	CORE	SECTION	PIECE NO. (HARD ROCK)	INTERVAL	VOLUME cu. cm.	COMMENTS	
	<u> </u>	-				ļ <u>.</u>		
•		 		<u> </u>		├		
		 	 	 -		├		
		 	1		 	-	1 1	
• • •	-		_			 		 -
				<u> </u>				
							1	-
		-						
				<u> </u>				
		-				<u> </u>	1.	
						<u> </u>		
		-		-				
						<u> </u>		
\neg		┝╌┤						
\neg		 						
		 						<u> </u>
						\vdash		
			\neg					
		igsquare						
			<u>.</u>]	1,1	
			_					-
\rightarrow	-							
 	-							
\dashv			\dashv				1	
\dashv							. <u>F</u>	
					i			

For specifying these intervals, please refer to the published schematic lithologic columns for each core, rather than to the core
photographs, because many of the latter are wrongly placed in relation to the meter scales.

GUIDELINES FOR THE SUBMISSION OF PROPOSALS/IDEAS

*This newly revised edition of Guidelines supercedes previous editions.

A. General Information

JOIDES accepts input by individuals or groups into the Ocean Drilling Program as:

- 1. Preliminary Proposals (ideas/suggestions) for scientific ocean drilling. Examples are
 objectives (a specific process),
 drilling targets, downhole and
 other experiments, etc. Such
 input generally lacks either geographic specificity, site survey
 data, or both.
- 2. Mature Drilling Proposals (Minimum requirements are detailed in Section C.)

Preliminary and mature proposals will be reviewed and prioritized by one or more JOIDES > advisory panels. | Only mature proposals are ultimately considered and prioritized by the Planning Committee, which plans the actual drilling. Thus ideas which become part of the drilling program do so either by evolving into a mature proposal, or by incorporation into an existing proposal with multiple objectives. Proposals are considered mature when accompanied by a specific set of minimum data listed in Section C and provided by the proponents or JOIDES (certain technical data may not be readily available to proponents). It follows that the time required for an idea or proposal to be processed by the JOIDES science

advisory structure and become part of the drilling plan will depend on the completeness of the required data at the time of submission. Proponents are therefore urged to submit as complete a package as possible. Lead time requirements are given in Section D. Preliminary proposals should be sent in triplicate to the JOIDES Office. Six copies of mature proposals should be submitted to the JOIDES Office.

B. Review Process

Proposals should be submitted to the JOIDES Office which forwards the material to the appropriate advisory panel(s) for review. The JOIDES panels review and prioritize the proposals and advise the Planning Committee of their recommendations. panels may request additional information from the proponents and may suggest that the proposal be modified to enhance its scientific merit. Some proposals of limited scope may be incorporated by the advisory panels into a proposal of broader scope.

Thematic Panels are primarily concerned with the process aspects of the science. Regional Panels and Working Groups review the proposal within the context of a particular geographic regions (e.g. additional "sites of opportunity" may be recommended for drilling, to maximize the scientific payoff of drilling in that particular region). As the proposal matures and proceeds through the advisory system, service panels make recommendations regarding technical aspects of the proposed drilling (e.g. site survey review, safety review, engineering and technology review, downhole measurements review, etc.).

The Planning Committee monitors and directs the proposal review process, reviews the recommendations of the advisory panels, decides the fate of proposals, and ultimately integrates the approved proposals into a detailed drilling plan and ship track. Figure 1 is a diagrammatic representation of the review process.

C. Minimum Requirements

1. Minimum Requirements for Mature Proposals (6 copies):

The following items should be discussed in the proposal:

- a) Specific scientific objectives with priorities
- b) Proposed site locations and alternative sites
- c) Background information, including regional and local geological setting and identification of existing geophysical/geological data base
- d) Drilling requirements for each objective (e.g. estimated drilling time, steaming time, water depth, drill string length, reentry, etc.)
- e) Logging, downhole experiments and other supplementary programs (estimated time, specialized tools and requirements, etc.)
- f) Known deficiencies in data required for:
 - location of drill sites (site surveys)
 - interpretation and extrapolation of drilling results (regional geophysics)

ODP has established standards for site survey data which are given in Annex A. This outlines the techniques to be used in the various environments which may be encountered.

- g) Statement of potential safety problems in implementing proposed drilling.
- h) Other potential problems (weather window, territorial jurisdiction, etc.).
- i) The name and address of an individual assigned as a proponent for each site who will serve as a contact for JOIDES when additional information is required.

Proponents are also required to submit a Site Proposal Summary Form for each proposed drilling site.

2. Data Availability and Deposition:

Proponents are asked to identify available data in three categories:

- a) The primary data necessary and sufficient to support the scientific proposal. The ODP Databank is authorized to duplicate and distribute these data as needed for ODP evaluation and planning procedure.
- b) Other data relevant to the proposal which may be obtained from publicly accessible data bases in the U.S. and elsewhere.
- c) Data which will eventually be available for public access but has release clauses imposed by the data holder (proponent). These data are not normally considered as part of the evaluation of the scientific merit of the related proposal.

It is emphasized that supporting data for a proposal in the above categories must be deposited with the ODP Databank to ensure that a proposal is considered mature. Please categorize data with a, b, or c in the site summary form. Annex B summarizes the guidelines for submission of data to the ODP Databank.

3. Submission of Preliminary Proposals (Ideas/Suggestions)-3 copies:

Preliminary proposals (ideas and suggestions) for ocean drilling should be submitted to the JOIDES Office in triplicate letter form, preferably with as much background information as possible.

4. Letters of Intent to Submit may be sent to the JOIDES Office at any time.

D. Lead Time

As a general rule a minimum of at least 36 months lead time is required from the time of proposal submission to actual drilling. Exceptionally, less lead time may be acceptable in some cases where site surveys are not required.

E. All submissions should be sent (with the appropriate number of copies) to the JOIDES Office.

The JOIDES Office is always available to discuss and advise proponents of proposal requirements.

JOIDES Office Graduate School of Oceanography University of Rhode Island Narragansett, Rhode Island 02882 USA

Telephone: (401)792-6725 or 6726 Telex: 9103802848 (JOIDES URI UD)

Telemail: JOIDES.URI

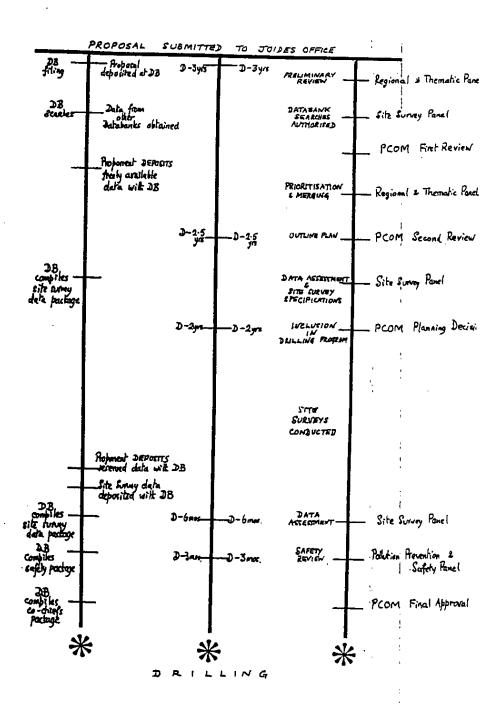


Fig. 1: Proposed flowchart for drilling proposals (showing the involvement of JOIDES Panels and the Databank)

ANNEX A

ODP SITE SURVEY STANDARDS

ENVIRONMENTS	A	В	С	D	E	F	G	Н
<pre>X = Vital (X) = Desirable (X) *= Desirable but may be required in some cases e.g. presence of bottom simulating reflectors</pre>	PELAGIC (shallow penetration)	SMALL BASIN/OPEN OCEAN (Shallow penetration)	PASSIVE MARGIN (Single bit)	PASSIVE MARGIN (re-entry)	FORE-ARC WEDGE	SPREADING RIDGE (zero or thin sediment cover)	OCEAN CRUST (thick sediment cover)	HIGH TEMPERATURE ENVIRONMENT
1.Air Gun SCS	(X)	(X)	(X)	(X)	(X)	(X)	(X)	(X)
2. Water Gun SCS (or other high resolution system)	х	x	х	(X)	х	,	X or 5	X or 5
3.3.5 KHz.	х	х	х	(X)	(X)	ļ	(X)	
4.Chirp Sonar	(X)	,				(X)		
5.MCS		(X)	х	х	х		X or 2	X or 2
6. Seismic Velocity Determination			х	Х	х	Х	х	
7.Side Scan Sonar	(X)	x	(X) or 8	(X) or 8	(X) or 8			
8.Seabeam Bathymetry	(x)		(X) or 7	(X) or 7	(X) or 7	x		
9.Piston Cores	х	х	(x)*	(X)	(x)	(x)	(X)	x
10. Heat Flow			(x)*	(x)*	(x)*	(x)	(X)	х
11.Magnetics & Gravity		 	(X)	(X)		х	X	x
12.Dredging &/or Barerock Drilling						Х		
13.Photography						х		(X)*
14.Submersible						(x)		(x)*
15.Current Meter (for bottom shear)			(X)*	(x)*	(X)			

ANNEX B

ODP DATABANK GUIDELINES FOR THE SUBMISSION OF REGIONAL GEOPHYSICAL AND SITE SPECIFIC SURVEY DATA

Data should be submitted in the following forms:

- 1) Digital magnetic tapes of underway geophysical data values (topography, magnetics, gravity) merged with smoothed final navigation. The preferred format is MGD77, which expects a "header" record as well as data records.
- 2) Cruise report describing in detail the results of surveys.
- 3) Large copies, suitable for xeroxing, of single-channel seismic reflection profiles. The preferred format for 3.5 kHz records is on 35 mm film negative.
- 4) Large sepia copies (suitable for ozalid reproduction) of processed multi-channel seismic reflection profiles.
- 5) Large (page sized) photographic negatives of any side scan sonar data (GLORIA, SeaMARC I or II) collected.
- 6) Large sepia copies (suitable for ozalid reproduction) of any SEABFAM data, presented at a contour interval deemed appropriate.
- 7) Large sepia copies (suitable for ozalid reproduction) of any "specialized" data sets (such as sediment thickness maps, bathymetry/magnetic contour charts, velocity analyses, etc.) that have been developed in the course of a cruise report. The format and nature of the presentation of these data will be variable and will be dependent upon the nature of specific interest at each site.

Data should be deposited at:

ODP Databank Lamont-Doherty Geological Observatory Palisades, New York 10964 USA Telephone: (914)359-2900

ODP SITE PROPOSAL SUMMARY FORM (Submit 6 copies of mature proposals, 3 copies of preliminary proposals)

Proposed Site:	General Objective:
	1
1	}
1	
General Area:)
Position:	Thematic Panel interest:
Alternate Site:	Regional Panel interest:
<u> </u>	
Specific Objectives:	
•	·
•	
Background Information (indicate status of	data as outlines in the Guidelines):
Regional Geophysical Data:	
Seismic profiles:	
, I ,	
Other Para	
Other data:	
·	
1	
Site Specific Survey Data:	
Seismic profiles:	
-	
7	
Other Data:	
	•
Operational Considerations:	
- 	
Water Depth: (m) Sed. Thickness:	(m) Tot. penetration: (m)
HPC Double HPC Rotary Drill	Single Bit Reentry
Notice of additional contract to	
Nature of sediments/rock anticipated:	
Weather conditions/window:	·
THE STATE OF THE S	
Territorial jurisdiction:	
•	
Other:	
<u></u>	
Special Requirements (staffing, instrument	ation, etc.):
Proponent:	FOR OFFICE USE:
Address & phone	Date received:
number:	Classification no.:
, , , , , , , , , , , , , , , , , , , ,	Panel allocation:
	,

ANALYSIS OF PROPOSALS RECEIVED BY THE JOIDES OFFICE

(as of 30 APRIL 1985)

Tot	al numb	er of proposals received:	139
a.	<u>Atlant</u>	ic Ocean	36 proposals
	compri:	sing: General Mediterranean Sea Caribbean Sea Norwegian Sea	22 8 5 1
	from:	U.S./JOIDES institutions U.S./non-JOIDES institutions France ESF nations U.K. FRG Canada	11 3 11 2 4 3 2
b.	Indian	Ocean	50 proposals
	compri	sing: General Red Sea	46 4
	from:	U.S./JOIDES institutions U.S./non-JOIDES institutions France ESF nations U.K. FRG	25 12 8 2 2
c.	Southe	rn Oceans	9 proposals
	from:	U.S./JOIDES institutions New Zealand France	6 1 2
đ.	West P	acific Ocean	23 proposals
	from:	U.S./JOIDES institutions U.S./non-JOIDES institutions France Japan FRG U.K. Australia New Zealand	2 4 6 4 2 1 3

**

e.	Centra	l and Eastern Pacific Ocean	13 proposals
:	from:	U.S./JOIDES institutions U.S./non-JOIDES institutions France Canada	8 2 2 1
£.	Genera	l/Instrumental	8 proposals
	from:	U.S./JOIDES institutions U.S./non-JOIDES institutions U.K. ESF nations FRG	4 1 1 1
Tot	al (by	country)	139 proposals
1		U.S./JOIDES institutions 56 U.S./non-JOIDES institutions 22 France U.K. ESF nations FRG Japan Canada Non-JOIDES nations (Australia) (New Zealand)	78 29 8 5 7 4 3 3 2

In addition, 50 ideas or suggestions for drilling have been received. These range from brief letters of intent to immature proposals. Several of the items listed have now been re-submitted as full proposals. There are also a small number of proposals for workshops.

NEW PROPOSALS

Ref.	Date Rec'd.	Title	Investigator(s)	Inst.	Site & Avail' Data	Survey Puture Need	Pen Refer		POON Reference	Remarks
122/	12/28/84	Present dell'idea et the Free			T	T			1	
	ļ	Fracture Zone	Karson, J.A.	MEIOI	Y	Yes	LITHP ARP	1/85 1/95	Approved 3/84	Legs 106 & 109
125/1	01/14/8	Bare-rock drilling at the Mid- Atlantic Ridge (22°53'N)	Bryen,W.B Purdy,G.M. Thompson,G.	INDIAN OC	Yes	No	LITHP APP	1/85	Approved 3/84	Legs 106 & 109
					T	1			· · · · · · · · · · · · · · · · · · ·	
134/E	03/25/85	Ocean drilling in the Gulf of Aden	Girdler,R.W.	Univ. Newcostle, U.K.	Yes	Yes	10P 13CP SOHP	4/85 4/85 4/85		
135/E	03/25/85	Drilling on Broken Ridge to evaluate thermo-machanical models of rifting	Weissel,J.R. Karner,G.D.	LDGO U.Durhem, U.K.	Scare	Yes	IOP TECP SOHP	4/85 4/85 4/85		
137/E	03/25/85	Oceanic drilling on the fossil ridges in the Indian Ocean	Schlich,R. Royer,J.Y. Whitechurch,N. Cloochiatti,M.	Strasb'g		Yes	IOP TECP LITTEP SOMP	4/85 4/85 4/85 4/85	1	
138/8	03/25/85	Oceanic drilling at the Rodriguez Triple Junction Indian Ocean	Schlich,R. Munachy,M. Royer,J.Y. Montigny,R. Whitschurch,H.	I.de Phys. d. Globe Strasb'g I.de Geol Strasb'g France	Yes	No	IOP LITTOP	4/85 4/85 4/85	· · · · · · · · · · · · · · · · · · ·	
139/E	03/25/85	Oceanic drilling on the Agulhas Plateau,S.W.Indian Ocean	Jacquart,G. Vincent,E.	CERM-IPP, Rueil Univ.PSM Curie, Prance	Scme	Yeas	IOP SOP SOHP TECT	4/85 4/85 4/85 4/85		
140/E	04/01/85	Deep drilling in the Central and Northern Red Sea axial areas	Pautot,G. Guerrico,P.	IFREMER, Brest BRGM, Brest France	Some	Yes	IOP SOHP TECP LITHP	4/85 4/85 4/85 4/85		
141/E	04/02/85	Drilling proposal for the Inchus deep see fan	Jacquart,G. Leclaire,L.	CERM-IFF, Rueil Mas.Matn. d'Hist.Nat France	Score	Yes	IOP SOHP	4/85 4/85		See props. 78/8 a 96/8
			<u>8</u>	OUTHERN OCE	ANS					,
129/0	01/21/85	ODP opportunities in the Bounty Trough	Davy, B.W.	D.S.I.R. N.Zeeland	Some	Yes	MPAC SOHP TECP SOP	1/85 1/85 1/85 1/85	1	ŕ
136,⁄0	03/25/85	Oceanic drilling on the Kerguelen-Heard Plateau	Schlich, R. Munschy, M Leclaire, L. Froelich, F.	I.de Phys. d.Globe Strasb'g Mus.Natn. d'Hist.Nat Prance	Yes	No	IOP SOP TECP SOMP	4/85 4/85 4/85 4/85	,	
			ME	ST PACIFIC	OCEAN					
126/C	01/14/85	Site proposals for scientific ocean drilling in the Australasian region (composite proposal)	Crook, K.A.W. Falvey, D.A. Packham, G.H.	ANU, Canberra BMR, Canberra U. Sydney Australia	Yes	Yes	SOHP LITHP TECP TOP SOP WPAC	1/85 1/85 1/85 1/85 1/85 1/85		Composite proposal from Australian community. COCS-2 super-proposal.
L27/t	01/18/85	Eastern Sunda Arc 6 N.W. Australian Collision: accretionary processes in a sharp transition zone of arc- -continent collision	Reed,D.L. Silver,E.A. Meyer,A.W.	U.Calif., Santa Cruz ODP/TAMU	9cme	Yes	SCHP TECP IOP WPAC	1/85 1/85 1/85 1/85		
L30/t	l l	Evolution of the SN Pacifics drilling proposal for the area north of New Zealand	Ende, J.V.	N.Z.Ocean. Institute N.Zealand	Some	Yes	TECP WPAC LITHP SOHP	1/85 1/85 1/85 1/85	, ,	
131/0		Banda Sea Harginel Basin: trapped ocean crust & displaced continental borderland	Silver,E.A.	U.Calif., Santa Cruz	Some	Yes	MPAC TECP LITHP SOHP	3/85 3/85 3/85 3/85		
L32/0		COP Proposal on drilling the TTT-type Triple Junction area off Boso, Japan	Ogawa,Y. Pujioka,K. Nakamura,K.	Kyushu U. ORI, Tokyo ERI, Tokyo Japan	Yes	No	WPAC TECP SOHP	3/85 3/85 3/85		

_			CENTRAL	6 EAST PAC	iric oa	EAN				
123/E	12/28/84	Regional drilling studies at 1 IPOD Site 501/504	Mottl.M.J.	MHOI	Yes	No***	LITHP CEPAC	1/85 1/85		Related to Prop. 124/E
124/E	01/02/85	Proposal to deepen Hole 504B	Becker,K. (on behalf of LITHP)	s.1.0.	Yes	No	LITHP CEPAC	1/85 1/85	Approved 9/84	Approved as back-up Leg
142/E	04/02/85	Equatorial Pacific depth transect: Ontong Java Plateau	Mayer,L. Berger,W.H.	Dalhousie U.Canada SIO	Some	Yes	CEPAC SOHP	4/85 4/85		
_			TECH	NICAL & INST	RUMENTA	Ľ,				,
128/F	01/21/85	Proposal for an ODP hole dedicated to the physical properties, mechanical state, and structural fabric of deforming sediments in accretionary prisms	Karig, D.E.	Cornell Univ.	Yes	No	SCHIP TECEP DMP WPAC	1/85 1/85 1/85 1/85		
133/E	03/21/85	In situ sampling of pore fluids during CDP	McDuff, R.E. Barnes, R.O.	U. Washington	N/A	N/A	DMP LITHP	3/85 3/85		
143/E	04/15/85	In situ magnetic susceptibility measurements with a well log probe	Krammer,K. Pohl,J.	Inst. fur Allgemeine u.Angewan- te,Munich, PRG		N/A	ARP LITHP DMP	4/85 4/85 4/85		

REVISION TO LISTING PUBLISHED IN FEBRUARY 1985 JOURNAL

Ref.	Date Rec'd.	Title	Investigator(s)	Inst.	Site S Avail' Dota		Pane Refere		PCOM Reference	Remarks
			i	ATLANTIC OC		INCOL	·		1	· · · · · · · · · · · · · · · · · · ·
63/A	6/21/84	Madeira Abyssal Plain	Duin, E.J.T. Kuijpers, A. Schuttenhelm	Geol. Survey of Netherlnds (ESF)	Yes					DELETED Not a full proposal
81/A	9/4/84	Proposal for an Ionian Sea transact	Hieke, W. Makris, J.	Univ. of Hamburg, PRG	9		ARP MED-WG SOHP TIECTP	9/84 9/84 9/84 10/84		Previously listed as approved
	ı i			INDIAN GCE			F			·
30/B	1/10/84	Proposals for oceanic drilling on the Davis Ridge and Malagasy Margin (Mozambique Channel)	Clocchiatti,M. Laclaire,L. Segoufin,J.	Mus.Natn. d'Hist. Naturelle, Univ.PaM Curie Paris,Fr.	Some	Yes	TECP IOP SOHP TECP	1/84 4/85 4/85 4/85	·	French Blue Book Revised proposal received 03/85
55/B	3/21/84	The Makran Porearc, Pakistan	Leggett, J.K.	Imperial College, UK	Some	Yes	IOP TECIP SOHP	4/84 4/84 4/85	:	Revised 04/85
89/B	10/1/84	Mantle heterogeneity leg- drilling on S.W.Indian Ridge Fracture Zone	Dick, H.J.B. Natland, J.	MHOI SIO	Scme		LITHP SOP IOP TECP	3/85 3/85 3/85 3/85		US Indian Ocean Workshop.Related to Prop.112/B. Revised 3/1/85
97/8	10/1/84	Variation of Neogene surface fertility & carbonate compensation in the Equatorial Indian Ocean	Peterson, L.C.	RSMAS	Score	Yes	SCHIP IOP	3/85 3/85		US Indian Ocean Workshop; related to Prop.88/B. Revised 3/85
115/E	10/10/84	Deep sea drilling on the Agulhas Plateau and adjacent basins	Herb,R. Oberhansli,H.	Univ. Berr Switz. ESS		Yes	IOP SOID TECP	10/84 10/84 10/84		Revised 4/85
116/	10/10/84	Comparative data on deep sea drilling on 90°5 & Chagos- Laccadive Ridges for palaeo- ceanog.purposes;evaluation of advantages & disadvantages	l	Switz. ES		Yes	TOP SCHP	10/84 10/84		Revised 4/85
	1	i i		OUTHERN OC	ANS	1	····			
71/C	7/20/84	Drilling on the Shaka Ridge	Sclater, J.G.	UT Austin	Some	Yes			 	DELETED Not a full proposal.
73/C	08/02/84	Drilling proposal on the Antarctic margin off the Adelie Coast	Wannesson,J.	IFP, France		Yes	TECP SOP SOHP	2/85 2/85 2/85		Site summary forms submitted.Revised proposal rec'd 02/85
			TECH	VICAL & INST	HUMENIA	+				
69/P	7/23/84	Rock stress measurement in the southern part of the Norwegian Sea		Univ. of Lulea Sweden, ESI			TECP ARP DNP	7/84 7/84 7/84		Re-classified from Atlantic Ocean section

DEEP SEA DRILLING PROJECT

1. SAMPLE AND CORE REPOSITORY REPORT

The twelve-month post-cruise sampling moratorium is completed for Deep Sea Drilling Project (DSDP) Legs. 94, 95, and 96. Samples from all DSDP Legs (1-96) are now available to investigators for studies which will result in published papers.

Cores collected from the Atlantic and Antarctic Oceans and the Mediterranean and Black Seas (DSDP Legs 1-4, 10-15, 28, 29, 35-53, 71-82, and 93-96) are housed at the East Coast Repository at the Lamont-Doherty Geological Observatory. Cores collected from the Pacific and Indian Oceans and the Red Sea (DSDP Legs 5-9, 16-27, 30-34, 54-70, and 83-92) are housed at the West Coast Repository at the University of California, San Diego.

Interstitial water samples, gas samples, as well as frozen whole round samples (archived specifically for organic geochemical analyses) from all DSDP Legs are stored at the West Coast Repository.

2. INFORMATION HANDLING GROUP REPORT

The Information Handling Group of the Deep Sea Drilling Project is responsible for all scientific data collected on board GLOMAR CHALLENGER during her 96 cruises and produced in the Deep Sea Drilling Shore laboratories. It is the mission of the group to protect and preserve this data, to provide for distribution of the data throughout the scientific community and to en-

courage the use of the data through technical support to scientists.

The group comprises members with a broad variety of geological and data processing background. Senior members of the group joined Deep Sea Drilling shortly after the beginning of drilling. This maturity of staff helps the group to provide data services for the wide variety of data found in the Deep Sea Drilling Project databases, and to provide valuable assistance to researchers in choosing the best data for their research objectives.

DATA SERVICES

The responsibility for data services is currently shared by DSDP and the National Geophysical Data Center (NGDC) in Boulder, Colorado. During the phaseout of DSDP all data service responsibility will gradually shift to NGDC. Several major databases have already been transferred to NGDC. Researchers are encouraged to make NGDC their primary contact for DSDP data, since NGDC may be able to provide correlative data from other sources. NGDC will forward any requests requiring special treatment to DSDP for prompt attention. DSDP is concentrating most of its available resources on completing all databases prior to phase out and will only process data requests requiring special treatment and those requests relating to Initial Report preparation.

All prime data collected as part of Deep Sea Drilling operations and some special files compiled by the Information Handling Group are available for distribution to researchers. Table DSDP-1 summarizes and categorizes the types of data available. The data files listed under Special Files represent compilations and ancillary data which may be of particular assistance to researchers.

Data files can be provided in their entirety or the researcher may request subsets of the data based on research criteria. Databases can be searched on most data items, using simple or complex search expressions. Using linked searches all databases can be searched on common drill site summary data and paleontological age unit assignments. Records selected from one database can be correlated with records from others. DSDP search software also contains internal tables which assign all sites to appropriate geographical (ocean, sea) locations.

The preferred medium for providing the results of data requests is magnetic tape. Printed listings can also be provided for small volume data requests. Modest sized data files may also be available on floppy disks. On experimental basis DSDP can also provide direct transfer of data via the UNIX UUCP Network and remote log-in via guest accounts on our computer.

DATA TRANSFER TO NGDC

As DSDP databases are completed they are being transferred to the National Geophysical Data Center in Boulder, Colorado. Transferred databases are marked with an asterisk in Table DSDP-1. All DSDP data files will be transferred to NGDC prior to the end of DSDP data service operations in early 1987. We will periodically report on the progress of database transfers in this journal. Investigators may also request personal copies of Table DSDP-1 from DSDP. Requests for data services for transferred databases will, in general, be referred to NGDC. DSDP will continue to provide service for investigators preparing DSDP publication contributions and for requests NGDC cannot service.

DATA REQUEST PROCEDURE

Data requests can be submitted in writing or by telephone. When writing please include a brief description of your research project so that we can best determine which data sets would be most helpful. When requesting data on magnetic tape please be sure to include your preferred tape specifications. Tapes can be provided at 800 or 1600 bpi, odd parity, EBCDIC or ASCII character set, labelled or unlabelled, single or multiple files per reel. Please state any block (physical record) size limitations required by your host system.

Please address your requests for information and data to:

Data Manager
Deep Sea Drilling Project (A-031)
Scripps Institution of
Oceanography
La Jolla, CA 92093
(619) 452-3526 and FTS 895-5496

-Mail via UUCP use: {ihnp4,akgua,decvax,dedwest, ucbvax}!sdccvax!sdcc6!peterw

or directly to NGDC:

Marine Geology and Geophysics Division National Geophysical Data Center NOAA E/GC3 325 Broadway Boulder, CO 80803 (303) 497-6338 or FTS 320-6338 Data Orders

FTS 320-6338 Data Orders (303) 497-6339 or FTS 320-6339 Technical Info.



TABLE DEDP-1

	AV	AVAILABLE DSDP DATA	
Data file: legs available	Data source	Description	Comments
Part 1. Lithologic and stratigraphic data	phic data		
Paleontology: 1-72	Initial Reports	Data for 26 fossil groups. Code names, abundance and preservation data for all Tertiary fossils found thus far in DSDP material. The fossil dictionary comprises more than 10,000 fossil names and codes.	Does not include Mesosoic fos- sils.
Smear Slide: 1-96	Shipboard data	Information about the nature and abundance of sediment components.	No data for Leg 83 (hard rock cores only).
Thin Sections: 6-83	Shipboard Data Initial Reports	Petrographic descriptions of igneous and metamorphic rocks. Includes information on mineralogy, texture, alteration, vesicles, etc.	Legs 31-83 are keypunched and awaiting final checks. Available by Sept. 1985. No data for Legs 8-12, 15, 19-21, 23-24, 27, 36, 40-41, 42B, 44, 47-48, 50, 56-57, 71-72, 75-76, 78, 80.
Visual Core Descriptions: 1-95	Shipboard data	Created from shipboard descriptions of the core sections. Information about core color, sedimentary structures, disturbance, etc.	
Visual Core Descriptions - igne- ous rocks: 37.76	Shipboard data	Igneous and metamorphic rock lithology, texture, structure, mineralogy, alteration, etc.	No data for Legs 40, 42B, 44, 47-48, 50, 56-57.
SCREEN: 1-64, 84-92	Processed data	Computer generated lithologic classifications. Basic composition data, average density, and age of layer.	
Part 2. Physical properties and quantitative analytic core data	d quantitative ans	lytic core data	
Carbon-carbonate 1-94	Shore Laboratory Shipboard car- bonate bomb data	Percent by weight of the total carbon, organic carbon and carbon carbonate content of a sample. Bomb data has carbonate only.	No data for Legs 46, 83, 88, 91, 92.
Grain Size 1:79 No data collected for Leg 16, 64 and 65.	Shore laboratory	Sand-silt-clay content of sample.	; ; ;
GRAPE (gamma ray attenua- tion porosity evaluator): 1-96	Shipboard data	Continuous core density measurements.	No data for Leg 46.
Hard-rock major element analyses: 13-76	Shore-based and shipboard analy-	Major-element chemical analyses of igneous, metamorphic and some sedimentary rocks composed of volcanic material.	No data for Legs 20, 21, 31, 40, 42B, 44, 47, 48, 50, 56, 57, 71.

Fart & Enjaces properties and descent			
Hard-rock minor element anal- yee: 13-76	Shore-based and shipboard analy- ses	Minor-element chemical analyses of igneous, metamorphic and some sedimentary rocks composed of volcanic material.	No data for Legs 20, 21, 27, 35, 40, 42B, 44, 47, 48, 50, 56, 57, 66, 67, 71.
Hard-rock paleomagnetics: 14-76	Shore-based and shipboard	Paleomagnetic and rock magnetic measurements of igneous and metamorphic rocks and a few sedimentary rocks composed of volcanic material.	No data for Legs 1-13, 17, 18, 20-22, 24, 30, 31, 35, 36, 39, 40, 47, 48, 50, 56, 57, 67, 68, 74.
Long-core spinner magnetome- ter sediment paleomagnetics: 68, 70-72, 75	Shipboard analyses		Should be used with reserva- tion since the cores were later discovered to be rust- contaminated and disturbed. Quality of the data for each core clarified by documenta- tion.
Discrete sediment sample magnetics: 71-73, 75	Shipboard labora- tory	Paleomagnetic measurements: declination, inclination, and intensity of magnetisation. NRM measurements and AFD measurements when available. Data from hydraulic piston cores only.	
Alternating field demagnetisa- tion: 71, 73, 79	Shipboard labora- tory	Paleomagnetic measurements of sediments on which alternating field demagnetization is carried out. Data from hydraulic piston cores only.	
Sonic velocity: 3-95	Shipboard analyses	Hamilton frame and 'ear muff' methods.	
Vane Shear: 61-94	Shipboard data	Sediment shear strength measurements using Wykeham Farrance 2350 and Torvane instruments.	No data for Legs 62, 65-67, 70, 77, 79-84, 88, 89, 91-93. Additional unprocessed data may exist prior to Leg 61.
Analytic water content, porosity, and density: 1-96	Shipboard labora- tory	Measurements by syringe method from known volumes of sediment.	No data for Leg 41.
Well Logs: 6-96	Shipboard data	Analog charts and magnetic tapes produced by Gearhart-Owen and Schlumberger.	*Schlumberger LIS tapex 48, 50, 51, 57, 80-84, 87, 89, 95, 96. Gearhart-Owen tapex 60, 61, 63-65, 67, 68, 70, 71, 74-76, 78. Analog data only: 6, 8, 46, 66, 69.

Part 3. Underway geophysics	indicates that	Part 3. Underway geophysics muicates that the database is complete and transferred to NGDC.	ij
*Bathymetry: 7-96	Shipboard data	Analog record of water-depth profile.	Available as digital data and 35mm continuous microfilm. No data for Legs 10-12, 57-60.
*Magnetics: 7.96	Shipboard data	Analog record produced on the Varian magnetometer in gammas. Digitized at 5-min. intervals on an OSCAR X-Y digitizer.	No data for Legs 10, 11.
*Navigation: 3-96	Shipboard data	Satellite fixes and course and speed changes that have been run through a navigation smoothing program, edited on the basis of reasonable ship and drift velocities and later merged with the depth and magnetic data.	
*Seismic: 1-96	Shipboard data	Sub-bottom profiles recorded on Edo Both Bolt and Kronllite filters Western Graphic Model 550. Digital data available on board. Fast and for Legs 89-96 in SEG-Y tape format.	Both Bolt and Kronllite filters available on board. Fast and alow sweeps available on micro- film and photographs.

Part 4. Special reference files		
*Site Summary: 1-96	Initial Core Descriptions	Information on general hole characteristics (i.e., location, water depth, sediment nature, basement nature, etc.).
DSDP Guide to Core Material: 1-66	Initial Reports Prime data files	Summary data for each core: depth of core, general paleontology, sediment type and structures, carbonate, grain size, x-ray, etc.
AGEPROFILE: 1-96	Initial Reports Hole summaries	Definition of age layers downhole.
COREDEPTH: 1-96	Shipboard sum- maries	Depth of each core. Allows determination of precise depth (in m) of a particular sample.
Part 5. Aids to research		
DATAWINDOW	An on-line search an nance. An account c access to data files c	An on-line search and retrieval program to access many DSDP files; also used for data base maintenance. An account can be arranged at the University of California computer center to allow remote access to data files compatible with DATA WINDOW.
MUDPAK	A plotting program; perties).	A plotting program; handles multiple parameter data (e.g., plots of well logs, plots of physical properties).
DASI	A file of DSDP-affili	A file of DSDP-affiliated scientists and institutions. Can be cross-referenced and is searchable.
KEYWORD INDEX	A computer searchal	A computer searchable bibliography of DSDP related papers and studies in progress.
SAMPLE RECORDS	Inventory of all ship	Inventory of all shipboard samples taken.
DSDP Site Map	DSDP site positions	DSDP site positions on a world map of ocean topography.

JOIDES/ODP BULLETIN BOARD

NOTICE:

1985-1986 schedules for vessels of the UNOLS fleet may obtained by accessing the Telemail bulletin boards:

SHIP.SCHED85 SHIP.SCHED86

CANADIAN NATIONAL COMMITTEE for ODP

Canada announces the formation of a Canadian National Committee for the Ocean Drilling Program. Information concerning the committee should be addressed to either Paul Robinson, Director or Louisa Horne, Coordinator at the Centre for Marine Geology, Dalhousie Univ., Halifax, N.S. B3H 3J5, Canada Telephone: 902-424-3488 Telex: 01922848 (DALCYP HFX)

An electronic ODP Bulletin Board has been established in the OCEAN NET system of Telemail by Texas A & M University. The message board contains latitude and longitude information of the JOIDES RESOLUTION and may be accessed by using the command "Check ODP".

REQUEST FOR PROPOSALS

The JOIDES Planning Committee is now starting to plan for a phase of drilling in and proximal to the Indian Ocean, to follow the Weddell Sea leg (Leg 114). This will be on the basis of approximately 1 1/2 years drilling in that region prior to operations in the active island arc regions of the Western Pacific.

In order to develop the drilling program in the region, the Planning Committee is seeking proposals for drilling in the Indian Ocean, proximal areas and the Western Pacific. Proponents are reminded that they should adhere to the requirements listed in the Guidelines for the Submission of Proposals /Ideas. It is desirable that proposals be submitted as soon as possible. While proposals may be submitted at any time, early submission is the only guarantee that a proposal will be considered for the drilling schedule.

Japan ODP Activities

After deciding to join ODP as a full member starting on October 1, 1985, the pace of Japanese ODP-related activities has accelerated.

As part of this accelerated effort, Japan is scheduling a workshop to formulate a "Japanese proposal book" for Western Pacific drilling targets. This workshop will be held in 1985. Also in 1985, site survey cruises are scheduled for the Nankai Trough and Japan Sea using the R/V Tansei Maru. In the next few years, intensive site surveys are planned for the following areas using the R/V Hakuho Maru:

Japan Sea and Japan Trench - 1986 Northern Phillipine Sea - 1987 North East Pacific - 1988

OPPORTUNITIES FOR IN SITU DOWNHOLE PHYSICAL AND CHEMICAL MEASUREMENTS WITHIN THE OCEAN CRUST

During the next few years a series of deep drill holes (several hundred meters to more than one kilometer) in zero age crust on the Mid-Atlantic Ridge south of the Kane Fracture Zone and in a region of active hydrothermal activity on the East Pacific Rise(EPR) between latitudes 9 N and 13 N will provide an opportunity for the emplacement of instrumentation for short and long term in situ monitoring of many important physical and chemical parameters of the seafloor. The purpose of this announcement is to alert the scientific community to the potential of these inovative measurements and to stimulate the formulation and planning of experiments and proposals to take advantage of this new opportunity.

A small number of carefully selected locations will primarily focus on studies of magmatic processes and the creation of ocean lithosphere. The sites chosen will be repeatedly visited and will thus provide many opportunities for new and additional downhole experimentation. Furthermore, tentative plans call for the development of a wireline re-entry system that would enable research vessels other than the JOIDES RESOLUTION to emplace, service or replace downhole instrument packages.

Although this announcement specifically mentions mid-ocean ridge drilling, the JOIDES Lithosphere and Downhole Measurements Panels anticipate that a number of excellent sites will be available throughout the first 10 years of CDP which will provide opportunities for a wide range of downhole measurements.

Information concerning drilling plans may be obtained from the JOIDES Office at the Graduate School of Oceanography, University of Rhode Island, Narragansett, Rhode Island, 02882. The chairman of the JOIDES Lithosphere Panel is G.M. Purdy, Department of Geology and Geophysics, Woods Hole Oceanographic Insitution, Woods Hole, Massachusetts, 02543. The chairman of the JOIDES Downhole Measurements Panel is M.H. Salisbury, Department of Geology, Dalhousie University, Halifax, Nova Scotia, B3H 3J5, Canada.

DSDP Site Map Updated

Topography of the Oceans with Deep Sea Drilling Project sites now available through Leg 96. To request a map contact:

Barbara J. Long
Information Handling Group
Deep Sea Drilling Project
A-031
Scripps Institution of
Oceanography
La Jolla, Calif. 92093
Tel: (619) 452-4638

Paleontologic Data

Paleontologic data from Initial Reports of Deep Sea Drilling Projects Volumes 1-71 are now available for computer searches. The system includes all fossil groups cited in these volumes. For information contact:

Lillian Musich
Information Handling Group
Deep Sea Drilling Project
A-031
Scripps Inst. of Oceanography
La Jolla, Calif. 92093
Tel: (619) 452-3526

Request for Notices

The editorial staff of the JOIDES Journal encourages members of the the scientific community to submit announcements, notices and other news items for publication in the JOIDES/ODP Bulletin Board section of the JOIDES Journal.

Interested parties should send items for publication to: JOIDES/ODP Bulletin Board, JOIDES Office, University of Rhode Island, Narragansett, R.I., 02882

MISSING THIN SECTIONS

Many thin sections that were loaned to investigators from DSDP Repositories are still missing from the collection. These thin sections are a unique representation of the material on which the descriptions of each core are based and are a part of the reference collection maintained at each Repository for visiting scientists and for future studies. Their absence diminishes the usefulness of the collection to the entire scientific community. All investigators who have borrowed thin sections are urged to return them as soon as possible to the repository where the corresponding cores are stored. Questions should be referred to:

The Curator Ocean Drilling Program P.O. Drawer GK College Station, Texas 77841 (409) 845-6620

GROUND BREAKING CEREMONY

On March 25, the Texas A & M University System Board of Regents held a groundbreaking ceremony to celebrate the beginning of construction for the new ODP building. Dr. Frank Vandiver, Texas A & M University president, presided. The building is on a six-acre site in the University's new research park. The \$5-million building will occupy 59,684 square feet. In addition to offices and laboratories, the building will also be the site of the "Gulf Coast" Repository.

At the ceremony, Dr. K. June Linstedt-Siva, president of the National Science Board, presented NSF's Meritorious Public Service Award to the Ocean Drilling Program, an honor never before given to an organization.

ARCH MCLERRAN RETIRES

ODP honored Arch McLerran, its first Manager of Engineering and Drilling Operations, and formerly of DSDP and NSF, at a retirement dinner on March 26. More than 100 ODP employees and special friends of the McLerrans attended the dinner and dance. Sandra Toye, Jack Clotworthy, and Phil Rabinowitz presented Arch with gifts, letters of congratulations, and plaques in honor of his outstanding service and contributions to the field of scientific ocean drilling. Mr. Barry Harding has now taken over Arch's position.

ODP REPORTS AND DATA

ODP Technical Notes

The first ODP Technical Note became available in December, 1984, aimed at scientists planning drilling proposals. It is entitled "PRELIMINARY TIME ESTIMATES FOR CORING OPERATIONS (ODP TECHNICAL NOTE NO. 1)" and includes a number of graphic illustrations of penetration rate estimates for our various coring tools and other drilling operations. It has had wide distribution already and may require reprinting. Copies may be obtained by writing to the Director, Ocean Drilling Program, Texas A & M University, College Station, Texas, 77843-3469.

A second ODP Technical Note will soon be available outlining the capabilities of <u>JOIDES</u> <u>Resolution</u> as a vessel and of the shipboard laboratory complex.

Leg 100 Preliminary Report

A special issue in the ODP Preliminary Report Series is presently being assembled for the shakedown cruise Leg 100 in the Gulf of Mexico and Florida Straits. This will be an extended version to include the shipboard hole summary, core description and core photography data on the HPC/XCB-cored Florida Slope Site 625. Since no Proceedings volume will be published on this cruise the above report will allow interested investigators access to the cores recovered.

Leg 101 Databases

ODP databases for Leg 101 will be available to the public in March, 1986. Anyone who wishes to make a request can do so by calling or writing the ODP Data Base Group. Please contact Kathe Lighty [(409) 845-2673] at the Ocean Drilling Program, 500 University Drive West, College Station, Texas 77840.

ODP NEWS

Miami Port Call

JOIDES Resolution steamed into the port of Miami early on the morning of March 14, after completing the first cruise of the Ocean Drilling Program. During the ship's stay in port, several tours were conducted for the local press, more than 250 faculty members and students from colleges and universities in the region, and EXCOM members who also attended a special luncheon on Sunday, March 17.

Norfolk Port Call

April 11 marked the completion of Leg 102 and the ship's arrival in Norfolk. This port call included press and university tours similar to those conducted in Miami. In addition, more than 100 staff members from U.S. government agencies including JOI, NSF, USGS, the Office of Management and Budget, and the Office of Naval Research came aboard. Other special guests were PCOM members, the USGS associate director; and scientific attaches from the Swiss, French, West German, British, and Norwegian embassies.

On Sunday, a special tour and luncheon were given for Canadian officials representing heads of government ministries and departments, universities and industry.

OFFICIAL ODP PANEL ABBREVIATIONS

EXCOM Executive Committee

PCOM Planning Committee

TEDCOM Technology and Engineering Development Committee

Thematic Panels

LITHP Ocean Lithosphere Panel

SOHP Sediments and Ocean History Panel

TECP Tectonics Panel

Regional Panels

ARP Atlantic Regional Panel

CEPAC Central and Eastern Pacific Regional Panel

IOP Indian Ocean Regional Panel
SOP Southern Oceans Regional Panel
WPAC Western Pacific Regional Panel

Service Panels

DMP Downhole Measurements Panel
IHP Information Handling Panel

PPSP Pollution Prevention and Safety Panel

SSP Site Survey Panel

Working Groups

MED-WG Mediterranean Working Group

RS-WG Red Sea Working Group

JOIDES Office 1/85

DIRECTORY OF JOIDES COMMITTEES, PANELS AND WORKING GROUPS

(Address and/or phone number in parentheses is that of the alternate.)

EXECUTIVE COMMITTEE (EXCOM)

Dr. John Knauss, Chairman
(Alt: Dr. Jean-Guy Schilling)
Graduate School of Oceanography
University of Rhode Island
Narragansett, RI 02882-1197
Tel: (401)792-6222 (792-6102)

Prof. Dr. Friedrich Bender
(Alt: Prof. Hans-J. Durbaum)
Bundesanstalt fur Geowissenschaften und Rohstoffe
D-3000 Hannover 51
Postfach 510153
Federal Republic of Germany
Tel: (49)511-643-2243 (643-2331)

Dr. Alan Berman
(Alt: Dr. C.G.A. Harrison)
Rosenstiel School of Marine and
Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149
Tel: (305) 361-4000 (361-4610)

Dr. Bernard Biju-Duval IFREMER 66, Avenue d'Iena Paris 75116, France Tel: (33)(1)723-55-28

Dr. John Bowman
Natural Environment
Research Council
Polaris House, North Star Avenue
Swindon, Wilts SN2 1EU, U.K.
Tel: (44)0793-40101

Dr. Douglas Caldwell (Alt: Dr. Lawrence F. Small) Oregon State University College of Oceanography Corvallis, OR 97331 Tel: (503)754-4763 Dr. G. Ross Heath College of Ocean and Fishery Sciences, HA-40 (Alt: Dr. Brian T.R. Lewis School of Oceanography, WB-10) University of Washington Seattle, WA 98195 Tel: (206)543-6605 (543-6487)

Dr. Charles E. Helsley
(Alt: Dr. Ralph Moberly)
Hawaii Institute of Geophysics
University of Hawaii
2525 Correa Road
Honolulu, HI 96822
Tel: (808) 948-8760 (948-8765)

Dr. William W. Hutchison
Department of Energy, Mines, and
Resources (EMR)
Earth Sciences Sector
580 Booth Street
Ottawa, Ontario KlA 0E4, Canada
Tel: (613)992-5910
(Alt: Dr. Michael J. Keen
Atlantic Geoscience Centre
Bedford Institute of
Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y A42
Canada
Tel: (902)426-2367)

Dr. Akihiko Hattori (Alt: Dr. Kazuo Kobayashi) University of Tokyo 1-15-1, Minamidai Nakano-ku, Tokyo 164, Japan Tel: (81)(03)376-1251

Dr. Arthur Maxwell
(Alt: Dr. Thomas A. Davies)
Institute for Geophysics
University of Texas at Austin
4920 North I.H. 35
Austin, TX 78751
Tel: (512)451-6468

Dr. William J. Merrell (Alt: Dr. T.K. Treadwell, Jr.)
Department of Oceanography
Texas A&M University
College Station, TX 77843
Tel: (409)845-3651

Dr. William A. Nierenberg (Alts: RADM Justin Langille, Dr. William Menard) Scripps Institution of Oceanography University of California, San Diego La Jolla, CA 92093 Tel: (619)452-2826 (452-2836)

Dr. Barry Raleigh
| (Alt: Dr. Dennis E. Hayes)
Lamont-Doherty Geological
| Observatory
Palisades, NY 10964
Tel: (914) 359-2900, ext. 345
| (ext. 470)

Dr. John Steele Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2500

Dr. Jan Stel
Netherlands Council of
Oceanic Research
P.O. Box 19121
NL-1000 GC Amsterdam
Netherlands
Tel: (31) (20) 22-29-02

Dr. D. James Baker (JOI liaison)
Joint Oceanographic
Institutions Inc.
2100 Pennsylvania Avenue, NW
Room 316
Washington, DC 7 20037
Tel: (202)331-9438

Dr. Roger Larson (PCOM liaison) Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6725

Dr. Philip D. Rabinowitz (Science Operator liaison) Ocean Drilling Program Texas A&M University College Station, TX 77843 Tel: (409)845-2673

Ms. Sandra Toye (NSF liaison)
Head, Oceanographic Centers and
Facilities Section (OCFS)
National Science Foundation
1800 G Street, NW
Washington, DC 20550
Tel: (202) 357-7837

PLANNING COMMITTEE (PCOM)

Dr. Roger Larson, Chairman Graduate School of Oceanography University of Rhode Island Narragansett, RI / 02882-1197 Tel: (401)792-6725

Dr. Helmut Beiersdorf
(Alt: Dr. Ulrich von Rad)
Bundesanstalt fur Geowissenschaften und Rohstoffe
D-3000 Hannover 51
Postfach 510153
Federal Republic of Germany
Tel: (49)0511-643-2412 or -2413
(0511-6468-2788)

Dr. Richard Buffler
Institute for Geophysics
University of Texas at Austin
4920 North I.H. 35
Austin, TX 78751
Tel: (512)458-5358

Dr. Jean-Paul Cadet
Dept. des Sciences de la Terre
Universite d'Orleans
45046 Orleans Cedex, France
Tel: (33)38-63-37-03
(Alt: Dr. Jean Francheteau
Institut de Physique du Globe
Lab. de Geophysique Marine
Univ. Pierre et Marie Curie
4, Place Jussieu
75230 Paris Cedex 05, France
Tel: (33)1-354-13-22)

Dr. Stefan Gartner
Department of Oceanography
Texas A&M University
College Station, TX 77843
Tel: (409)845-8479

Dr. Dennis E. Hayes
(Alt: Dr. Marcus Langseth)
Lamont-Doherty Geological
Observatory
Palisades, NY 10964
Tel: (914) 359-2900, ext. 470
(ext. 518)

Dr. Jose Honnorez
Rosenstiel School of Marine and
Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149
Tel: (305)361-4678 or -4662

Dr. Donald M. Hussong
(Alt: Dr. William T. Coulbourn)
Hawaii Institute of Geophysics
University of Hawaii
2525 Correa Road
Honolulu, HI 96822
Tel: (808) 948-8711 or -8972
(-8489)

Dr. Miriam Kastner
(Alt: Dr. Edward L. Winterer)
Scripps Institution of
Oceanography, SVH A-012
La Jolla, CA 92093
Tel: (619) 452-2065 (452-2360)

Dr. John Malpas
Department of Earth Sciences
Room X227
Memorial University
Elizabeth Avenue
St. John's, Newfoundland
Canada AlC 5S7
Tel: (709) 737-4382 or -8142
(Alt: Dr. Paul T. Robinson
Department of Geology
Dalhousie University
Halifax, Nova Scotia B3H 3J5
Canada
Tel: (902) 424-2361)

Dr. Russell E. McDuff Department of Oceanography, WB-10 University of Washington Seattle, WA 98195 Tel: (206)545-1947

Dr. Hans Schrader (Alt: Dr. Shaul Levi) College of Oceanography Oregon State University Corvallis, OR 97331 Tel: (503)754-2296

Prof. Asahiko Taira
(Alt: Dr. Kazuo Kobayashi)
Ocean Research Institute
University of Tokyo
1-15-1 Minamidai
Nakano-ku, Tokyo 164, Japan
Tel: (81) (03) 376-1251, ext. 256

Dr. Richard P. Von Herzen Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2465

Dr. Roger N. Anderson (Wireline Logging Services Contractor liaison) Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914) 359-2900, ext. 335

Dr. Robert S. Andrews
(Continental Scientific
Drilling Committee liaison)
Geophysics Research Board
National Research Council
National Academy of Sciences
2101 Constitution Ave., NW
Washington, DC 20418
Tel: (202) 334-3350

Dr. Garrett W. Brass (NSF liaison)
Ocean Drilling Program
National Science Foundation
1800 G Street, NW
Washington, DC 20550
Tel: (202)357-9849

Mr. John Clotworthy (JOI liaison)
Joint Oceanographic
Institutions Inc.
2100 Pennsylvania Avenue, NW
Room 316
Washington, DC 20037
Tel: (202)331-9438

Dr. Louis E. Garrison (Science Operator liaison) Ocean Drilling Program Texas A&M University College Station, TX 77843 Tel: (409)845-0182

ATLANTIC REGIONAL PANEL (ARP)

Dr. Lucien Montadert, Chairman Institut Francais du Petrole 1-4, Avenue Bois-Preau B.P. 311 92506 Rueil-Malmaison Cedex France Tel: (33)1-749-0214, ext. 2979

Dr. James Austin, Jr. Institute for Geophysics University of Texas at Austin 4920 North I.H. 35 Austin, TX 78751 Tel: (512)458-5358 Dr. Albert W. Bally
Department of Geology
Rice University
Houston, TX 77251
Tel: (713)527-4880, ext. 3627

Dr. Loubomir F. Jansa
Atlantic Geoscience Centre
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y A42
Canada
Tel: (902) 426-2734

Dr. Kim D. Klitgord Atlantic Marine Geology Branch U.S. Geological Survey Woods Hole, MA 02543 Tel: (617)548-8700

Dr. Jean Mascle Laboratoire de Geodynamique sous-Marine Univ. Pierre et Marie Curie B.P. 48 06230 Villefranche-sur-Mer France Tel: (33) (93) 01-75-80

Dr. John C. Mutter
Geoscience Building, Room 102
Lamont-Doherty Geological
 Observatory
Palisades, NY 10964
Tel: (914)359-2900, ext. 525

Dr. Paul T. Robinson
Department of Geology
Dalhousie University
Halifax, Nova Scotia B3H 3J5
Canada
Tel: (902)424-2361

Dr. Robert Speed
Department of Geological Sciences
Northwestern University
Evanston, IL 60201
Tel: (312)492-3238

Dr. Jorn Thiede Geologisch-Palaontologisches Institut Olshausenstrasse 40/60 D-2300 Kiel Federal Republic of Germany Tel: (49)431-880-2855 Dr. Brian Tucholke
Department of Geology and
Geophysics
Woods Hole Oceanographic
Institution
Woods Hole, MA 02543
Tel: (671)548-1400, ext. 2494

Dr. Richard Buffler (PCOM liaison) Institute for Geophysics University of Texas at Austin 4920 North I.H. 35 Austin, TX 78751 Tel: (512)458-5358

Dr. Jean-Paul Cadet (PCOM liaison) Department des Sciences de la Terre Universite d'Orleans 45046 Orleans Cedex, France Tel: (33) 38-63-37-03

CENTRAL AND EASTERN PACIFIC REGIONAL PANEL (CEPAC)

Dr. Thomas H. Shipley, Chairman Institute for Geophysics University of Texas at Austin 4920 North I.H. 35 Austin, TX 78751 Tel: (512)458-5358

Dr. Richard L. Chase
Department of Geological Sciences
University of British Columbia
Vancouver, British Columbia
Canada V6T 2B4
Tel: (604) 228-3086
(Alt: Dr. E.E. Davis
Pacific Geoscience Centre
P.O. Box 6000
9860 W. Saanich Road
Sidney, British Columbia
Canada V8L 4B2
Tel: (604) 656-8438)

Dr. Darrel S. Cowan Geological Sciences AJ-20 University of Washington Seattle, WA 98195 Tel: (206)543-4033 Dr. Jean Francheteau
Institut de Physique de Globe
Lab. de Geophysique Marine
Univ. Pierre et Marie Curie
4, Place Jussieu
75230 Paris Cedex 05, France
Tel: (33)(1)354-1322
(Alt: Dr. Jacques Bourgois
Dept. de Geotectonique
Univ. Pierre et Marie Curie
4, Place Jussieu
75230 Paris Cedex 05, France)

Dr. H. Paul Johnson School of Oceanography University of Washington Seattle, WA 98195 Tel: (206)543-8474

Dr. Yves Lancelot Dept. de Geologie Dynamique Universite Pierre et Marie Curie 4, Place Jussieu 75230 Paris Cedex 05, France Tel: (33)(1)336-2525, ext. 5155

Dr. Jacqueline Mammerickx Geological Research Division A-020 Scripps Institute of Oceanography La Jolla, CA 92093 Tel: (619) 452-2166

Dr. Hakuyu Okada Institute of Geosciences Shizuoka University Shizuoka-Shi 422, Japan Tel: (81)0542-37-1111

Dr. David K. Rea
Department of Atmospheric and
Oceanic Sciences
University of Michigan
Ann Arbor, MI 48109-2143
Tel: (313)764-0597

Dr. David C. Scholl U.S. Geological Survey, MS 99 345 Middlefield Road Menlo Park, CA 94024 Tel: (415)856-7089

Dr. John M. Sinton Hawaii Institute of Geophysics University of Hawaii 2525 Correa Road Honolulu, HI 96822 Tel: (808)948-7751 Dr. Ulrich von Stackelberg Bundesanstalt für Geowissenschaften und Rohstoffe Stilleweg 2 D-3000 Hannover 51 Postfach 510153 Federal Republic of Germany Tel: (49) (0511) 643-2790

Dr. Richard Buffler (PCOM liaison) Institute for Geophysics University of Texas at Austin Austin, TX 78751 Tel: (512)458-5358

Dr. Helmut Beiersdorf (PCOM liaison) Bundesanstalt fur Geowissenschaften und Rohstoffe Stilleweg 2, Postfach 510153 D-3000 Hannover 51 Federal Republic of Germany Tel: (49)0511-643-2412 or -2413

DOWNHOLE MEASUREMENTS PANEL (DMP)

Dr. Matthew Salisbury, Chairman Department of Geology Dalhousie University Halifax, Nova Scotia B3H 3J5 Canada Tel: (902)424-6461

Dr. Keir Becker
Deep Sea Drilling Project
Scripps Institution of
Oceanography
La Jolla, CA 92093
Tel: (619)452-3508

Dr. Sebastian Bell
Atlantic Geoscience Centre
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y A42
Canada
Tel: (902) 426-6759

Dr. Fred Duennebier Hawaii Institute for Geophysics 2525 Correa Road Honolulu, HI 96822 Tel: (808)948-8711 Mr. Daniel T. Georgi
EXXON Production Research Co.
Research Evaluation Division
P.O. Box 2189
Houston, TX 77001
Tel: (713) 965-4222

Dr. Richard E. Goodman Department of Civil Engineering 440 Davis Hall University of California Berkeley, CA 94720 Tel: (415)642-5525

Mr. Eddie P. Howell ARCO Oil and Gas Company P.O. Box 2819, PRC R205 Dallas, TX 75221 Tel: (214)422-6857

Dr. Alfred H. Jageler 7501 East 103 Street, South Tulsa, OK 74133 Tel: (918) 660-3532

Dr. Reinhard Jung
Bundesanstalt für Geowissenschaften und Rohstoffe
Postfach 510153
D-3000 Hannover 51
Federal Republic of Germany
Tel: (49)0511-6430

Dr. Hajimu Kinoshita Department of Earth Sciences Chiba University 1-33, Yayoi-cho, Chiba Japan, Zip 260

Dr. Gary R. Olhoeft U.S. Geological Survey Denver Federal Center, MS 964 Box 25046 Denver, CO 80225 Tel: (303)236-1302

Dr. Georges P. Pascal
Faculte des Sciences et
Techniques
University of Brest
Laboratoire de Geophysique Marine
6 Avenue le Gorgeu
29283 Brest Cedex, France
Tel: (33)98-46-25-21

~~+. 2561

Dr. Fred L. Sayles Department of Chemistry Woods Hole Oceanographic Institution "- Wole, MA 02543 Dr. Aytekin (Turk) Timur Chevron Oil Field Research Co. P.O. Box 446 La Habra, CA 90631 Tel: (213)694-7395

Mr. Richard K. Traeger Sandia National Laboratories P.O. Box 5800, Dept. 6240 Albuquerque, NM 87185 Tel: (505)844-2155

Or. Russell E. McDuff (PCOM liaison)

Department of Oceanography, WB-10

University of Washington Seattle, WA 98195 Tel: (206)545-1947

Dr. Richard P. Von Herzen (PCOM liaison) Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2465

Dr. Roger N. Anderson (LDCO liaison)
Lamont-Doherty Geological Observatory
Palisades, NY 10964
Tel: (914) 359-2900, ext. 335

INDIAN OCEAN PANEL (IOP)

Dr. Joseph R. Curray, Chairman Geological Research Division Scripps Institution of Oceanography La Jolla, CA 92093 Tel: (619)452~3299

Dr. James R. Cochran Lamont-Doherty Geological Obs. Palisades, NY 10964 Tel: (914)359-2900, ext. 396

Dr. Robert A. Duncan College of Oceanography Oregon State University Corvallis, OR 97331 Tel: (503)754-3504 (Currently at Research School of Earth Sciences Australian National University Canberra, A.C.T. 2601, Australia) Dr. David Falvey
Division of Marine Geosciences
Bureau of Mineral Resources,
Geology and Geophysics
GPO Box 378
Canberra , ACT 2601
Australia
Tel: (61) (062) 49-9327

Dr. Felix Gradstein
Atlantic Geoscience Centre
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y 4A2
Canada
Tel: (902)426-4870 or -2740

Prof. Warren L. Prell Geology Department Brown University 324 Brook Street Providence, RI 02912 Tel: (401)863-3221

Dr. Roland Schlich Institut de Physique du Globe Lab. de Geophysique Marine 5 rue Rene Descartes 67084 Strasbourg Cedex, France Tel: (33) (88) 60-25-31

Dr. John C. Sclater Institute for Geophysics University of Texas at Austin 4920 North I.H. 35 Austin, TX 78751 Tel: (512)451-6223

Dr. Lisa Tauxe
Scripps Institution of
Oceanography, A-20
University of California,
San Diego
La Jolla, CA 92093
Tel: (619) 452-6084

Dr. Ulrich von Rad Bundesanstalt für Geowissenschaften und Rohstoffe D-3000 Hannover 51 Postfach 510153 Federal Republic of Germany Tel: (49)(0511)643-2788

Dr. Jose Honnorez (PCOM liaison)
Rosenstiel School of Marine and
Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149
Tel: (305) 361-4678 or -4662

Dr. Miriam Kastner (PCOM liaison) Scripps Institution of Oceanography, SVH A-012 La Jolla, CA 92093 Tel: (619)452-2065

INFORMATION HANDLING PANEL (IHP)

Dr. Daniel W. Appleman, Chairman Department of Mineral Sciences Smithsonian Institution Washington, DC 20560 Tel: (202)357-2632

Dr. Ian Gibson
Department of Earth Sciences
University of Waterloo
Kitchener, Waterloo
Ontario N2L 3G1, Canada
Tel: (519)885-1221, ext. 3231

Dr. John C. Hathaway U.S. Geological Survey Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-8700

Mr. Michael Latremouille (memberat-large)
Department of Fisheries
Bedford Institute of Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y A42
Canada
Tel: (902) 426-3267

Dr. Alfred Loeblich, Jr. Department of Earth and Space Sciences University of California Los Angeles, CA 90024 Tel: (213)825-1563 Dr. Michael S. Loughridge
Marine Geology and
Geophysics Branch
National Geophysical and Solar
Terrestrial Data Center
Code D621, NOAA
Boulder, CO 80302
Tel: (303)499-1000, ext. 6487

Dr. Marthe Melguen
Bureau National Des Donnes
Oceanique
Centre Oceanologique de Bretagne
B.P. 337, 29273 Brest, France
Tel: (33) (98) 45-80-55

Mrs. Judit Nowak
Documentation Center
Bundesanstalt fur Geowissenschaften und Rohstoffe
D-3000 Hannover 51
Postfach 510153
Federal Republic of Germany
Tel: (49)0511-106-4366

Dr. Stefan Gartner (PCOM liaison)
Department of Oceanography
Texas A&M University
College Station, TX 77843
Tel: (409)845-8479

Dr. Jean-Paul Cadet (PCOM liaison) Department de Sciences de la Tere Universite d'Orleans 45046 Orleans Cedex, France Tel: (33) 38-63-87-03

Dr. Russell Merrill (liaison)
Ocean Drilling Program
Texas A&M University
College Station, TX 77843
Tel: (409)845-2673

LITHOSPHERE PANEL (LITHP)

Dr. G.M. Purdy, Chairman Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2826

Dr. John R. Delaney School of Oceanography University of Washington Seattle, WA 98195 Tel: (206)543-4830 Dr. Toshitsugu Fujii Earthquake Research Institute University of Tokyo 1-1-1 Yayoi Bunkyo-ku, Tokyo 113, Japan Tel: (81)3-812-2111, ext. 5751

Dr. James W. Hawkins Geological Researach Div., A-020 Scripps Institution of Oceanography La Jolla, CA 92093 Tel: (619)452-2161

Dr. Thierry Juteau
Laboratoire de Mineralogie et
Petrographie
Institut de Geologie
Universite Louis Pasteur
1 rue Blessig
67084 Strasbourg Cedex, France
Tel: (33) (88) 35-66-03

Dr. Charles H. Langmuir Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900

Dr. Margaret Leinen Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6268

Dr. Kenneth C. MacDonald Department of Geological Sciences University of California Santa Barbara, CA 93106 Tel: (805)961-4005

Dr. Nicolai Petersen
Institut f. Allgemeine
und Angewandte Geophysik
Theresienstrasse 41/4
D-8000 Munchen 2
Federal Republic of Germany
Tel: (49) (89) 2394-4233

Dr. Paul T. Robinson
Department of Geology
Dalhousie University
Halifax, Nova Scotia B3H 3J5
Canada
Tel: (902) 424-2361

Dr. John C. Sclater Institute for Geophysics University of Texas at Austin 4920 North I.H. 35 Austin, TX 78751 Tel: (512)451-6223

Dr. John M. Sinton Hawaii Institute of Geophysics University of Hawaii 2525 Correa Road Honolulu, HI 96822 Tel: (808)948~7751

Dr. Jose Honnorez (PCOM liaison)
Rosenstiel School of Marine and
Atmospheric Science
University of Miami
4600 Rickenbacker Causeway
Miami, FL 33149
Tel: (305) 361-4678 or -4662

Dr. Russell E. McDuff (PCOM liaison) Department of Oceanography, WB-10 University of Washington Seattle, WA 98195 Tel: (206)543-5060

MEDITERRANEAN WORKING GROUP

(MED-WG)

Dr. Jean Mascle, Chairman Laboratoire de Geodynamique Sous-Marine Univ. Pierre et Marie Curie B.P. 48 06230 Villefranche-sur-Mer France Tel: (33)93-01-75-80

Dr. Frank Fabricius Lehrstuhl fur Geologie Technische Universitat Muncehn Lichtenbergstr. 4 D-8046 Garching Federal Republic of Germany Tel: (49)89-3209-3191 Dr. Kim Kastens, Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 236

Dr. Jannis N. Makris
Institute of Geophisics
Hamburg University
Bundesstrasse 55
D-2000 Hamburg 13
Federal Republic of Germany
Tel: (49) 40-4123-3969

Dr. Lucien Montadert Institut Francais du Petrole 1-4, Avenue Bois-Preau B.P. 311 92506 Rueil-Malmaison Cedex France Tel: 933)1-749-0214, ext. 2979

Dr. Robert C. Thunell Department of Geology University of South Carolina Columbia, SC 29208 Tel: (803)777-7593

POLLUTION PRÉVENTION AND SAFETY PANEL (PPSP)

Dr. George Claypool, Chairman U.S. Geological Survey, MS 977 Box 25046, Denver Federal Ctr. Denver, CO 80225 Tel: (303)236-9382

Dr. Mahlon M. Ball U.S. Geological Survey Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-8700

Dr. Rustum Byramjee Total Compagnie Francaise des Petroles 39/43 Quai Andre Citroen 75739 Paris, Cedex 15, France Tel: (33)(1)578-3121 Dr. Graham Campbell
Resource Evaluation Branch
Canadian Oil and Gas Lands
Administration
355 River Road
Ottawa, Ontario KIA 0E4
Canada
Tel: (613) 993-3760, ext. 328

Dr. Arthur R. Green Research Scientist, EXXON Basin Exploration Division P.O. Box 2189 Houston, TX 77001 Tel: (713)965-4172

Dr. David B. MacKenzie Currently at Marathon International Petroleum (G.B.) Ltd. 174 Marylebone Road London NW1 5AT, U.K. Tel: (44) (1) 486-0222, ext. 2603

Dr. Gunter Stober
Deminex
Dorotheenstrasse 1
4300 Essen
Federal Republic of Germany
Tel: (49) (201) 726-3911

PCOM liaison = PCOM Chairman

RED SEA WORKING GROUP (RS-WG)

Dr. James R. Cochran, Chairman Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 396

Dr. Michael A. Arthur Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6867 or 6178

Dr. Harald Backer
Preussag AG
Erdol und Erdgas
Marine Technology Department
P.O. Box 4829
Bunteweg 2
D-3000 Hannover 71
Federal Republic of Germany
Tel: (49)0511-5105-320

1

Dr. Enrico Bonatti
Lamont-Doherty Geological
Observatory
Palisades, NY 10964
Tel: (914)359-2900, ext. 569 or

Dr. Robert G. Coleman Geology Department Stanford University Stanford, CA 94305 Tel: (415)497-9205

Dr. Thierry Juteau Institut de Geologie Lab. Mineralogie, Petrographic 1 rue Blessig 67084 Strasbourg, France Tel: (33)88-35-66-03

Dr. Paul M. Miller ESSO Exploration Inc. P.O. Box 146 Houston, TX 77001 Tel: (713)973-3135

Dr. Guy Pautot IFREMER Centre de Brest B.P. 337 29273 Brest, France Tel: (33)98-45-80-55, ext. 601

Dr. R.B. Whitmarsh
Institute of Oceanographic
Sciences
Wormley, Godalming
Surrey GU8 5UB, U.K.
Tel: (44)042879-4141

SEDIMENTS AND OCEAN HISTORY PANEL (SOHP)

Dr. Michael Arthur, Chairman Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6867 or 6178

Dr. Robert W. Embley NOAA/MRRD Oregon State University Hatfield Marine Science Center Newport, OR 97365 Tel: (503)867-3011, ext. 276

Dr. William W. Hay University of Colorado Museum Campus Box 218 Boulder, CO 80309 Tel: (303)492-6195 Dr. Yves P. Lancelot Dept. de Geologie Dynamique Universite Pierre et Marie Curie 4, Place Jussieu 75230 Paris Cedex 05, France Tel: (33)1-336-2525, ext. 5155

Dr. Larry Mayer
Department of Oceanography
Dalhousie University
Halifax, Nova Scotia B3H 4J1
Canada
Tel: (902)424-2503
(Alt: Dr. P.J. Mudie)
Atlantic Geoscience Center
Bedford Institute of
Oceanography
P.O. Box 1006
Dartmouth, Nova Scotia B2Y A42
Canada
Tel: (902)426-7734)

Dr. Philip A. Meyers
Department of Atmospheric and
Oceanic Science
University of Michigan
2455 Hayward Avenue
Ann Arbor, MI 48109
Tel: (313)764-0597

Dr. William Ruddiman Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 538/528

Dr. Rick Sarg ECKON Production Research Co. P.O. Box 2189 Houston, TX 77001 Tel: (713)966-6005

Dr. Michael Sarnthein Geologisch-Palaontologisches Institut Universitat Kiel Olshausenstrasse 40 D-2300 Kiel Federal Republic of Germany Tel: (49) 431-880-2851

Dr. Erwin Suess College of Oceanography Oregon State University Corvallis, OR 97331 Tel: (503)754-2296

Prof. Y. Takayanagi Institute of Geology and Paleontology Tohoku University Sendai, 980 Japan Tel: (81)222-22-1800 Dr. Lisa Tauxe
Scripps Institution of
Oceanography, A-020
University of California,
San Diego
La Jolla, CA 92093
Tel: (619) 452-6084

Dr. Hans Schrader (PCOM liaison) College of Oceanography Oregon State University Corvallis, OR 97331 Tel: (503)754-2296

Dr. Stefan Gartner (PCOM liaison) Department of Oceanography Texas ALM University | College Station, TX 77843

SITE SURVEY PANEL (SSP)

Dr. John W. Peirce, Chairman Petro Canada P.O. Box 2844 Calgary, Alberta T2P 3E3 Canada Tel: (403) 296-3915

Dr. Alain Mauffret
Dept. de Geologie Dynamique
Univ. Pierre et Marie Curie
4, Place Jussieu
75230 Paris Cedex 05, France
Tel: (33)1-336-25-25, ext. 5172
(Alt: Dr. Vincent Renard
Centre Oceanologique de
Bretagne
B.P. 337
29273 Brest Cedex, France
Tel: (33)98-458055)

Dr. John Orcutt
Scripps Institution of
Oceanography
University of California,
San Diego
La Jolla, CA 92093
Tel: (619) 452-2887
(Alt: Dr. Paul L. Stoffa
Institute for Geophysics
University of Texas at Austin
Austin, TX 78751
Tel: (512) 451-6468)

Dr. Kiyoshi Suyehiro
Department of Earth Sciences
Chiba University
1-33 Yayoi-cho, Chiba 260, Japan
Tel: (81)472-51-1111

Dr. Wilfried Weigel |
Institut fur Geophysik
 (Alt: Dr. How Kin Wong)
 Geologisch-Palaontologisches
 Institut)
Universitat Hamburg
Bundesstrasse 55
D-2000 Hamburg 13
Federal Republic of Germany
Tel: (49) (40) 4123-2981 (-4995)

Dr. Helmut Beiersdorf (PCOM liaison)
Bundesanstalt fur Geowissenschaften und Rohstoffe
D-3000 Hannover 51
Postfach 510153
Federal Republic of Germany
Tel: (49)0511-643-2412 or -2413

Dr. John Malpas (PCOM liaison)
Department of Earth Sciences
Room X227
Memorial University
Elizabeth Avenue
St. John's, Newfoundland AlC 5S7
Canada
Tel: (709)737-4382 or -8142

Mr. Carl Brenner (Data Bank liaison) Lamont-Doherty Geological |Observatory | Palisades, NY 10964 Tel: (914)359-2900

SOUTHERN OCEANS PANEL (SOP)

Dr. James Kennett, Chairman Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6616 or -6614

Dr. John B. Anderson Department of Geology Rice University Houston, TX 77251 Tel: (713)527-4884

Dr Brian D. Bornhold Pacific Geoscience Centre Institute of Ocean Sciences P.O. Box 6000 Sidney, British Columbia V8L 4B2 Canada Tel: (604)656-8267 Dr. Paul R. Ciesielski Department of Geology University of Florida Gainesville, FL 32611 Tel: (904)392-2141

Dr. Henry J.B. Dick
Dept. of Geology & Geophysics
Woods Hole Oceanographic
Institution
Woods Hole, MA 02543
Tel: (617)548-1400, ext. 2590

Dr. David H. Elliot Institute of Polar Studies 103 Mendenhall, 125 Oval Mall Ohio State University Columbus, OH 43210 Tel: (614)422-6531

Prof. Dieter Fuetterer
Alfred Wegener Institute for
Polar Research
Columbus Center
D-2850 Bremerhaven
Federal Republic of Germany
Tel: (49) 471-49006/7

Dr. Katsutada Kaminuma National Institute of Polar Research 9-10, 1-chome, Itabashi-ku Tokyo 173, Japan Tel: (81)03-962-4711

Dr. John L. LaBrecque 206 Oceanography Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 342

Dr. David Needham
IFREMER
Centre de Brest
B.P. 337
29273 Brest, France
Tel: (33)98-45-80-55

Dr. Erwin Suess College of Oceanography Oregon State University Corvallis, OR 97331 Tel: (503)754-2296

Dr. Jeffrey Weissel Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 533 ******

Dr. Dennis E. Hayes (PCOM liaison) Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900,ext.470 or 332

TECHNOLOGY & ENGINEERING DEVELOPMENT COMMITTEE (TEDCOM)

Mr. W.E. Bingman Shell Oil Company One Shell Plaza P.O. Box 2463 Houston, TX 77001 Tel: (713)241-5336

Mr. Bert R. Dennis ESS6 Group Leader Los Alamos National Laboratories P.O. Box 1663, MS-J980 Los Alamos, NM 87545 Tel: (505)667-5697

Mr. Terry N. Gardner EXXON Production Research Co. P.O. Box 2189 Houston, TX 77001 Tel: (713)965-4222

Dr. Jean-Paul Guinard
IFREMER
66, Ave. d'Iena
75016 Paris, France
Tel: (33)1-723-5528
(Alt: Dr. Jacques Delacour
Inst. Francais du Petrole
1-4, Ave. de Bois-Preau
B.P. 311
92506 Rueil Malmaison Cedex
France
Tel: (33)1-749-02-14)

Dr. Claude R. Hocott
Department of Petroleum
Engineering
University of Texas at Austin
Austin, TX 78712
Tel: (512)471-3161

Dr. Keith Manchester Atlantic Geoscience Centre Bedford Institute of Oceanography P.O. Box 1006 Dartmouth, Nova Scotia B2Y A42 Canada Tel: (902)426-2367 Dr. Claus Marx
Institut fur Tiefbohrkunde und
Erdolgewinnung
Agricolastrasse
D-3302 Clausthal-Zellerfeld
Federal Republic of Germany
Tel: (49)5323-72238

Dr. M. M. Newsom Dept. 1620-Exploratory Systems Sandia National Laboratories P.O. Box 5800 Albuquerque, NM 87185 Tel: (505)844-6867

Mr. Frank J. Schuh ARCO Oil and Gas Co. Exploration & Production Res. P.O. Box 2819 Dallas, TX 75221 Tel: (214)422-6982

Dr. William H. Silcox Chevron Corporation P.O. Box 7141 San Francisco, CA 94120-7141 Tel: (415)894-4126

Dr. Richard P. Von Herzen (PCOM liaison) Woods Hole Oceanographic Institution Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2465

Dr. Miriam Kastner (PCOM liaison) Scripps Institution of Oceanography, SVH A-012 Ia Jolla, CA 92093 Tel: (619)452-2065

TECTONICS PANEL (TECP)

Dr. Darrel S. Cowan, Chairman Geological Sciences AJ-20 University of Washington Seattle, WA 98195 Tel: (206)543-4033

Dr. Keir Becker
Deep Sea Drilling Project
Scripps Institution of
Oceanography
La Jolla, CA 92093
Tel: (619) 452-3508

Prof. Rene Blanchet GIS "Ocean et Geodynamique". Dept. des Sciences de la Terre 6, Avenue le Gorgeu | 29283 Brest Cedex, France Tel: (33)98-03-16-94, ext. 330

Dr. John I. Ewing | Woods Hole Oceanographic Institution | Woods Hole, MA 02543 Tel: (617)548-1400, ext. 2609

Prof. Dr. Karl Hinz Bundesanstalt für Geowissenschaften und Rohstoffe Stilleweg 2, Postfach 510153 D-3000 Hannover 51 Federal Republic of Germany Tel: (49) (0511) 643-2328

Dr. David G. Howell Pacific Marine Geology, MS 999 U.S. Geological Survey 345 Middlefield Road Menlo Park, CA 94025 Tel: (415)856-7141

Dr. Bruce D. Marsh Department of Earth and |Planetary Science Olin Hall Johns Hopkins University Baltimore, MD 21218 Tel: (301)338-7133

Dr. Kazuaki Nakamura Earthquake Research Institute University of Tokyo Hongo, Tokyo 113, Japan Tel: (81) (3) 812-2111, ext. 5757

Dr. Robin P. Riddihough
Pacific Geoscience Centre
P.O. Box 6000
Sidney, BC V8L 4B2, Canada
Tel: (604)656-8438
(Currently at College of
Oceanography
Oregon State University
Corvallis, OR 97331
Tel: (503)754-4430)

Dr. Peter R. Vogt Code 5110 Naval Research Laboratory Washington, DC 20375 Tel: (202)767-2024

Dr. Jeffrey Weissel Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 533

Dr. Donald M. Hussong (PCOM liaison) Hawaii Institute of Geophysics University of Hawaii 2525 Correa Road Honolulu, HI 96822 Tel: (808) 948-8711 or -8972

WESTERN PACIFIC PANEL (WPAC)

Dr. Eli A. Silver, Chairman Earth Sciences University of California Santa Cruz, CA´ 95064 Tel: (408)429-2266

Dr. Reinhard Hesse Department of Geological Sciences McGill University Montreal, Quebec H3A 2A7 Canada Tel: (514)392-5840

Dr. James C. Ingle Department of Geology Stanford University Stanford, CA 94305 Tel: (415)497-2537 or -9168

Dr. Hideo Kagami Ocean Research Institute University of Tokyo Minamidai, Nakano Tokyo 164, Japan Tel: (81)3-376-1251 Dr. Marc Langseth Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900, ext. 518

Dr. Margaret Leinen Graduate School of Oceanography University of Rhode Island Narragansett, RI 02882-1197 Tel: (401)792-6268

Dr. Kazuaki Nakamura Earthquake Research Institute University of Tokyo Hongo, Tokyo 113, Japan Tel: (81)(3)812-2111, ext. 5757

Dr. James Natland
Deep Sea Drilling Project
Scripps Institution of
Oceanography
La Jolla, CA 92093
Tel: (619) 452-3538

Dr. Claude Rangin Institut Francais du Petrole 1 et 4, Avenue de Bois-Preau B.P. 311 92506 Rueil-Malmaison Cedex France Tel: (33) 749-02-14

Dr. Jacques Recy O.R.S.T.O.M. B.P. A5, Noumea New Caledonia Tel: (687) 26-10-00

Dr. Hans-Ulrich Schluter Bundesanstalt für Geowissenschaften und Rohstoffe Stilleweg 2, Postfach 510153 D-3000 Hannover 51 Federal Republic of Germany Tel: (49)0511-643-2327

Dr. Brian Taylor Hawaii Institute of Geophysics University of Hawaii 2525 Correa Road Honolulu, HI 96822 Tel: (808)948-6649 Dr. Dennis E. Hayes (PCOM liaison) Lamont-Doherty Geological Observatory Palisades, NY 10964 Tel: (914)359-2900,ext.470 or 332

Prof. Asahiko Taira (PCOM liaison) Ocean Research Institute University of Tokyo 1-15-1 Minamidai Nakanoku, Tokyo 164, Japan Tel: (81)3-376-1251

4 . 7

ALPHABETIC TELEPHONE/TELEX DIRECTORY

NAME	PANEL	TELEPHONE	TELEX/ANSWERBACK
Anderson, J.B. Anderson, R.N. Andrews, R.S.	SOP (IDGO logging), PCCM, DMP (CSDC)	(713)527-4884 (914)359-2900, ext.335 (202)334-3350	7105762653/LAMONICEDO
Appleman, D.W. Arthur, M.A. Austin, J.	IHP SOHP, RS-WG	(202) 357–2632 (401) 792–6866/6178 (512) 458–5358	9103802848/JOIDES URI UD 9108741380/UTIG AUS
Backer, H.	RS-WG	(49) 0511-5105-320	175118325/PRBMT D
Baker, D.J.	(JOI), EXCOM	(202) 331–9438	
Ball, M.M.	PPSP	(617) 548-8700	
Bally, A.W.	ARP	(713)527-4880, ext.302/ (619)452-3508	9103371271/UCAND SIO SDG
Becker, K. Bejersdorf, H.	POOM, CEPAC, SSP	(49) 0511-643-2412/2413	923730/BGR HA D
Bell, S.	DATE .	(902) 426–6759	01931552/BIO DRT
Bender, F.	EXCOM	(49) 0511-643-2243	923730/BGR HA D
Berman, A.	EXCOM	(305) 361-4000	317454/VOPM REMAS MIA
Biju-Duval, B.	EXCOM	(33) 1-723-55-28	610//5/1FREMER F
Bingman, W.	TEDCOM	(713) 241–5336	/62248/SHELL FLG RXX
Blanchet, R.	TECP	(33) (98) 03-1694, ext.330	940621/OCEANEX F
Bonatti, E.	FS-WC	(914) 359-2900, ext.569/300	/LUS/62653/14441001CED
Bornhold, B.D.	SOP	(604) 656–8267	049/201/ 444000 /marre 0
Bowman, J.C.	EXCOM	(44) 793-40101	444293/ENVKE G
Bourgois, J.	CEPAC		200143/0FM.51A F

Brass, G.W.	(NSP), POOM	(202) 357-9849	
Brenner, C.	(ODP Data Benk), SSP	(914) 359~2900	7105762653/1AMONITERO
Buffler, R.	POOM, ARP, CEPAC	(512) 458-5358	9108741380/UTIG AUS
Burdett, M.	(Sagior)	(401) 792-6725	9103802848/JOIDES URI UD
Byzamjee, R.	PPSP	(33) 1-578-31-21	270587/TOTEX A P
Cadet, J.P.	PCCM, ARP, IMP	(33) 38-63-37-03	760600/CAUSTICHEL &
Caldwell, D.	MOCKE	(503) 754-4763	5105960682/0su covs
Campbell, G.	assa.	(613) 993-3760, ext.328	0534366/EMR RACE OFF
Chase, R.L.	CEPAC	(604) 228-3086	0454245/GBOP UBC VCR
Ciesielski, P.R.	ecce.	(904) 392-2141	
Claypool, G.	PPSP	(303) 236-9382	9109370740/GSA FTS LKWD
Clotworthy, J.	(JOI), POOM	(202) 331-9438	
Cochran, J.R.	IOP, 785-14G	(914)359-2900, ext.396	7105762653/1AMONTGEO
Coleman, R.G.	RS-WC	(415) 497-9205	348402/STANFRO STINU
Coulbourn, W.T.	PCOM	(808) 948-8489	
Cowan, D.S.	CEPAC, TROP	(206) 543-4033	328000/UM SEA
Curray, J.R.	10P	(619) 452-3299	9103371271/UCYAND SIO SDG
Davies, T.A.	EXCOM	(512) 451-6468	9108741380/UTIG AUS
Davis, E.E.	CERAC	(604) 656-8438	0497281/
Delacour, J.	TEDOOM	(33) 1-749-02-14	203050/IFPA F
Delaney, J.R.	LITHE	(206) 543-4830	32800/UW SEA
Dennis, B.R.	TEDOOM	(505) 667-5697	660495/IOS ALAMOS IAB

Dick, H.J.B.	aos .	(617) 458-1400, ext. 2590	951679/OCEANIST WOOH
Duennebier, F.	DMP	(808) 948-8711	
Duncan, R.	IOP	(503) 754~3504	510596082/0SU COVS
Durbaum, H.J.	EXCOM	(49) 0511-643-2331	923730/BGR HA D
Elliot, D.H.	SOP	(614).422-6531	
Embley, R.W.	SOHP	(503)867-3011, ext.276	
Ewing, J.	TECP	(617)548-1400, ext.2609	951679/OCEANIST WOOH
Fabricius, F.	MED-WG	(49) 3209–3191	17898174/
Falvey, D.	IOP	(61) (062) 49-9327	62109/BUROMIN AA
Francheteau, J.	POOM, CEPAC	(33) 1-354-13-22	202810/VOLSISM F
Fuetterer, D.	aos	(49) 471-49006/49007	0238695/POLAR D
Fujii, T.	LITHP	(81) 3-812-2111, ext.5751	2722148/
Gardner, T.N.	TEDCOM	(713) 965-4222	9108815579/USE PR TX HOU
Garrison, L.E.	(ODP), PCOM	(409) 845-0182	792779/OOP TAMU
Gartner, S.	POOM, IHP, SOHP	(409) 845–8479	
Georgi, D.T.	DMP	(713) 965-4222	
Gibson, I.	IHP	(519)885-1221, ext.3231	06955259/U OF W WILD
Goodman, R.E.	DMP	(415) 642-5525	
Gradstein, F.	IOD	(902) 426-4870/2740	01931552/BIO DRT
Green, A.R.	dSdd	(713) 965-4172	

		Ŕ	•
01931552/BIO DRT 328000/UW SEA 9103802848/JOIDES URI UD 293730/BGR HA D 870260/ULP F	25607/ORIUT J 2723515/POLRSC J 7105762653/LAMONTGEO 9103371271/UCAMID SIO SDG 01931552/BIO DRT 9103802848/JOIDES URI UD 792779/ODP TAMIJ	9103802848/JOIDES URI UD 25607/ORIUT J	7105762653/IAMONTGEO 200145/UPMCSIX F 9103371271/UCMWID SIO SDG 7105762653/IAMONTGEO
(902) 426-2734 (206) 543-8474 (202) 331-9438 (401) 792-6725/6726 (49) 0511-6430 (33) 88-35-66-03	(81) 3-376-1251 (81) 03-962-4711 (914) 359-2900, ext.236 (619) 452-2065 (902) 426-2367 (401) 792-6726 (401) 792-6516/6614 (409) 845-2197	(617) 548-8700 (401) 792-6222 (81) 03-376-1251	(914) 359-2900, ext.342 (33) 1-336-2525, ext. 5155 (619) 452-2836 (914) 359-2900
ARP CEPAC (JOI) (JOIDES) DMP LITHP, RS-WG	WPAC SQP MED-WG PCOM, 10P, TEDCOM EXCOM (JOIDES) SQP (ODP) DMP	EKCOM, PCOM	SOP CEPAC, SOHP EXCON LITHE
Jansa, L.F. Johnson, H.P. JOI Inc. JOIDES Office (URI) Jung, R. Juteau, T.	Kagami, H. Kaminuma, K. Kastens, K. Kastner, M. Keen, M.J. Keith, D. Kernett, J. Kidd, R. Kinoshita, H. Klitgozd, K.D.	Knauss, J.A. Kobayashi, K.	Labrecque, J.L. Lancelot, Y. Langille, J.E. Langmuir, C.H.

Larson, R.L. PCOM, EXCOM, PPSP (401) 793 Latremouille, M. IHP (902) 424 Leinen, M. LITHP, WPAC (401) 793 Levi, S. EXCOM (503) 75- Lewis, B. EXCOM (206) 54- Loughridge, M.S. IHP (206) 54- MacDonald, K.C. IHP (303) 49- MacKenzie, D. MED-MG (44) 1-4 Markis, J.N. MED-MG (49) 40- Malpas, J. PCOM, SSP (49) 40- Manchester, K. TECCM (619) 45- Marsh, B.D. TECCM (619) 45- Marsh, B.D. TECCM (49) 532 Mascle, J. ARP, MED-MG (301) 33- Mauffret, A. SSP (301) 33- Mayer, A.E.S. SOHP (401) 79- Mayer, L. PCOM, DMP, LITHP (206) 54- Mayer, L. PCOM, DMP, LITHP (206) 54-		
LITTHP, WPAC PCOM EXCOM		9103802848/JOIDES URI UD
LITHP, WPAC POOM A., Jr. IHP EXCOM A., Jr. IHP EXCOM IHP EXCOM IHP IHP IHP IHP IHP IHP IHP IH	(902) 426–3267	•
POOM EXCOM A., Jr. IHP IHP Y. K.C. LITHP PPSP N. MED-WG NOW, SSP CEPAC E., K. TEDCOM ARP, MED-WG TEDCOM ARP, MED-WG SSP A. EXCOM A. SOHP E.S. SOHP POOM, DMP, LITHP	(401) 792-6268 91	9103802848/JOIDES URI UD
EXCOM A, Jr. IHP P, M.S. IHP IHP IHP ITTHP PPSP NOM, SSP CEPAC K, J. TEDCOM TEDCOM ARP, MED-WG TEDCOM ARP, MED-WG TEDCOM ARP, MED-WG TEDCOM ARP, MED-WG SSP A. EXCOM EXCOM A. EXCOM A. EXCOM EXCOM A. EXCOM EXCOM A. EXCOM E	(503) 754–3504 51	5105960682/OSU COVS
IHP LITHE PPSP MED-WG PCOM, SSP CEPAC TEDCOM TECP TEDCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHE	(206) 543–6487 33	328000/UW SEA.
LITHE PPSP MED-WG PCOM, SSP CEPAC TEDCOM TECP TECP TECP TECP TECOM ARP, MED-WG SSP EXCOM	(231) 825-1563	
C. LITHP PPSP MED-WG PCOM, SSP CEPAC TEDCOM TEDCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHP	(303)499-1000, ext.6487	
PPSP MED-WG PCOM, SSP CEPAC TEDCOM TECOM TECOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHEP	(805) 961-4005	
MED-WG PCOM, SSP CEPAC TEDCOM TECC TECCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP PCOM, DMP, LITHP	(44)1-486-0222, ext.2603	
FOOM, SSP CEPAC K. TEDCOM TEDCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHIP	(49) 40-4123-3969 2	214732/
CEPAC TEDCOM TECP TEDCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHP	(709) 737–4382/8142 0	0164101/MEMORIAL SNE
TECCA TECCA TEDCOM ARP, MED-WG SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHIP	(619) 452-2166	9103371271/UCWWD SIO SDG
D. TECP. TEDCOM J. ARP, MED-WG SSP A. EXCOM (JOIDES) SOHP S.E. SOMP, DMP, LITHP	(902) 426–2367	01931552/BIO DRT
TEDCOM ARP, MED-WG SSP A. EXCOM EXCOM GJOIDES) SAE. FOOM, DMP, LITHP	(301) 338-7133	
ARP, MED-WG SSP A. EXCOM EXCOM EXCOM SE.S. SOHP SAE. POOM, DMP, LITHP	(49) 5323–72238	953813/TU ITE D
SSP EXCOM (JOIDES) SOHP POOM, DMP, LITHIP	(33) 93-01-75-80	
EXCOM (JOIDES) SOHP POOM, DMP, LITHP	(33) 1-336-25-25, ext.5172 2	200145/UPMCSIX F
S. (JOIDES) SOHP POOM, DMP, LITHP	(512) 451–6468	9108741380/UTIG AUS
SOMP POOM, DMP, LITHER	(401) 792–6839	9103802848/JOIDES URI UD
POOM, DMP, LITHE	(902) 424–2503	01921863/DALUNIVLIB HFX
	(206) 545–1947	328000/UW SEA
Melguen, M. IHP (33)98-	(33) 98-45-80-55	940627/OCEAN F
EXCOM	(619) 452-2514	9103371271/UCWWD SIO SDG

Merrell, W.J.	EXCOM	(409) 845-3651	
Merrill, R.	(ODP), IHP	(409) 845-9324	792779/00P TAMU
Meyers, P.A.	SOFE	(313) 764-0597	8102236056/U OF M AA
Miller, P.M.	RS-WC	(713) 973-3135	774169/EXPLORESSO HOU
Moberly, R.	EXCOM	(808) 948-8765/8660	
Montadert, L.	ARP, MED-WG	(33)1-749-0214, ext.2979	203050/IFP A F
Mudie, P.	SOFE	(902) 426-7734	01931552/BIO DRT
Mmsch, B.	(ESF)	(33) 88-35-30-63	890440/ESF F
Mutter, J.C.	ARP	(914)359-2900, ext.525	7105762653/LAMONICEO
Nakamura, K.	TECP, WPAC	(81) (3) 812-2111, ext.5757	2722148/
Natland, J.	WPAC	(619) 452-3538	9103371271/UCAND SIO SDG
Needham, D.	305	(33) 98-45-80-55	940627/OCEANEX F
Newsom, M.	MOOGEL	(505) 844-6867	169012/SANDIA LAB ABQ
Nickless, E.	(NERC)	(44) 793-40101	444293/ENVRE G
Nierenberg, W.A.	MOORE	(619) 452-2826	9103371271/UCMWID SIO SDG
Nowak, J.	THD	(49) 0-511-106-4366	922739/ŒIZ D
NSF (ODP)	(NSF)	(202) 357-9849	
ODP (TAMU)	(ado)	(409) 845–2673	792779/ODP TAMU
ODP Data Bank (IDGO)	(ODP Data Bank)	(914)359-2900, ext.542	7105762653/LAMONICEO
Okada, H.	CEPAC	(81) 0542-37-1111	
Olhoeft, G.R.	DAYD.	(303) 236–1302	
Orcutt, J.	SSP	(619) 452-2887	9103371271/UCMAND SIO SDG

Pascal, G.P.	JWG	(33) 98-46-25-21	940627/OCEANEX F
Pautot, G.	FS-WG	(33) 98-45-80-55, ext.601	940627/OCEANEX F
Peirce, J.W.	SSP	(403) 296–3915	03825753/PETROCANRS OGY
Petersen, N.	LITH	(89) 239-44233	
Peterson, M.N.A.	(DSDP)	(619) 452-3500	9103371271/UCWWD SIO SDG
Prell, W.L.	aoi	(401) 863-3221	
Purdy, G.M.	LITH	(617) 548-1400, ext.2826	951679/OCEANIST WOOH
		-	
Rabinowitz, P.D.	(ODP), EXCOM	(409) 845–2673	792779/ODP TRAKU
Raleigh, B.	MOCKET	(914) 359-2900, ext.345	7105762653/1AMONTGBO
Rangin, C.	WPAC	(33) 749-02-14	203050F/IFP A
Rea, D.K.	CEPAC	(313) 764-0597	466042/SPRL CI
Recy, J.	WPAC	(687) 26–10–00	193/ORSTOM NM
Renard, V.	SSS	(33) 98-45-80-55	940627/OCEAN F
Riddihough, R.P.	TECP	(503) 754-4430	510596082/05U COVS
Riedel, K.	(OOP)	(409) 845-2673	792779/ODP TAMU
Robinson, P.T.	PCOM, ARP, LITHE	(902) 424-2361	01922848/DALCYP HFX
Rucker, D.	(JOI travel)	(202) 331-9438	
Ruddiman, W.	SOHD	(914)359-2900, ext. 538/528	7105762653/1AMONTGEO
Salisbury, M.	DWD	(902) 424–6461	01922848/DALCYP HFX
Sarg, R.	SOAP	(713) 966–6005	

Sarnthein, M.	SOHP	(49) 431-880-2851	292656/UBKIE D
Sayles, F.L.	DWD	(617)548-1400, ext. 2561	
Schilling, J.G.	EXCOM	(401) 792–6102	9103802848/JOIDES URI UD
Schlanger, S.	(USSAC)	(312) 492–3238	
Schlich, R.	dOI	(33) 88-60-25-31	
Scholl, D.C.	CEPAC	(415) 856-7089	
Schluter, H.U.	WPAC	(49) 0511-643-2327	0923730/BGR HA D
Schrader, H.	PCOM, SOHP	(503) 754–2296	5105960682/osu covs
Schuh, F.J.	TEDCOM	(214) 422–6982	794784/ARCO PLNO
Sclater, J.C.	IOP, LITHP	(512) 452–6223	9108741380/UTIG AUS
Serocki, S.	(ODP)	(409) 845-6135	
Shipley, T.H.	CEPAC	(512) 458-5358	9108741380/UTIG AUS
Silcox, W.H.	TEDCOM	(415) 894-4126	176967/CHEVCORP SFO
Silver, E.	WPAC	(408) 429–2266	9105984408/UC SC LIB SACZ
Sinton, J.	CEPAC, LITHP	(808) 948-7751	
Small, L.	EXCOM	(503) 754-4763	5105960682/OSU COVS
Speed, R.	ARP	(312) 492-3238	
Steele, J.	EXCOM	(617)548-1400, ext.2500	951679/OCEANIST WOOH
Stel, J.H.	EXCOM	(31) (20) 22-29-02	16064/NRZ NL
Stober, G.	PPSP	(49) 201-726-3911	8571141/DX D
Stoffa, P.L.	SSP	(512) 451-6468	9108741380/UTIG AUS
Suess, E.	SOHP, SOP	(503) 754-2296	5105960682/osu covs
Summers, G.	(Canadian Nat. Comm. ODP)	(902) 424-3488	01922848/DALCYP HFX
Sutherland, A.	(NSF)	(202) 357–9849	
Suyehiro, K.	SSP	(81) 472-51-1111	

Taira, A.	PCOM, WPAC	(81) 03-376-1251, ext.256	25607/ORIUF J
Takayanagi, Y.	SOHP	(81) 0222-22-1800	
Tauxe, L.	IOP, SOHP	(619) 452–6084	9103371271/UCWND SIO SDG
Taylor, B.	WPAC	(808) 948–6649	
Thiede, J.	ARP	(49) 431-880-2855	292656/UBKIE
Thunell, R.C.	MED-WG	(803) 777–7593	
Timur, A.	DWD	(213) 694-7395	34410/
Toye, S.	(NSF), EXCOM	(202) 357–7837	
Traeger, R.	DWD	(505) 844-2155	
Treadwell, T.K.	EXCOM	(409) 845-7211	
Tucholke, B.	ARP	(617)548-1400, ext.2494	951679/OCEANIST WOOH
Vogt, P.R.	TECP	(202) 767-2024	
Von Herzen, R.P.	POOM, DMP, TEDCOM	(617)548-1400, ext.2465	951679/OCEANIST WOOH
Von Rad, U.	PCOM, IOP	(49) 0511-6468-2788	923730/BGR HA D
Von Stackelberg, U.	CEPAC	(49) 0511-643-2790	923730/BGR HA D
Weigel, W.	SSP	(49) 40-4123-2981	214732/UNI HH D
Weissel, J.	SOP, TECT	(914)359-2900, ext.533	7105762653/1AMONTGEO
Whitmarsh, R.B.	RS-WC	(44) 042879-4141	858833/
Winterer, E.L.	PCOM	(619) 452-2360	9103371271/UCAWID SIO SDG
Wong, H.	SSP	(49) 40-4123-4995	214732/UNI HH D

Please advise the JOIDES Office of any additions, changes, or corrections to the Directory Sections.

.....

		-
φ	JOIDES OFFICE \$	•
¢	Graduate School of Oceanography	-
¢	University of Rhode Island Narragansett, Rhode Island 02882-1197	>
¢	○	>
¢		>
¢	Telephone Numbers	>
¢		>
	Roger Larson - (401)792-6725	>
¢	Maria Burdett - (401)792-6725	>
	Darryl Keith - (401)792-6726	>
*	Tony Mayer - (401)792-6839	>
	·	>
¢	•	
¢	Telex II (TWX) Address	
¢	Western Union 9103802848	
¢	Answerback: JOIDES URI UD	
	•	
¢	•	¢
¢	Electronic Mail Addresses	¢
	Telemail: JOIDES.URI	
¢	MO EGGATINY 05000330	
	-	*

PUBLICATION HISTORY

Volume :	I -	1	9	75
----------	-----	---	---	----

Edition 1975/1 - May Edition 1975/2 - August Edition 1975/3 - November

Volume II - 1976

No.4 - March No.5 - April No.6 - September Special Issue: Manual on Pollution Prevention and Safety

Volume III - 1977

No.1 - January No.2 - September No.3 - October Special Issue: Initial Site Prospectus, Supplement Number One (Distributed April 1978)

Volume IV - 1978

No.1 - February No.2 - June No.3 - October

Volume V - 1979

No.1 - February No.2 - June No.3 - October

Volume VI - 1980

No.1 - February No.2 - June No.3 - October Special Issue: Initial Site Prospectus, Supplement Number Two (Distributed June 1980) Volume VII - 1981

No.1 - February No.2 - June No.3 - October

Volume VIII - 1982

No.1 - February No.2 - June No.3 - October

Volume IX - 1983

No.1 - February No.2 - June No.3 - October

Volume X - 1984

No.1 - February No.2 - June No.3 - October

Volume XI - 1985

No.1 - February No.2 - June