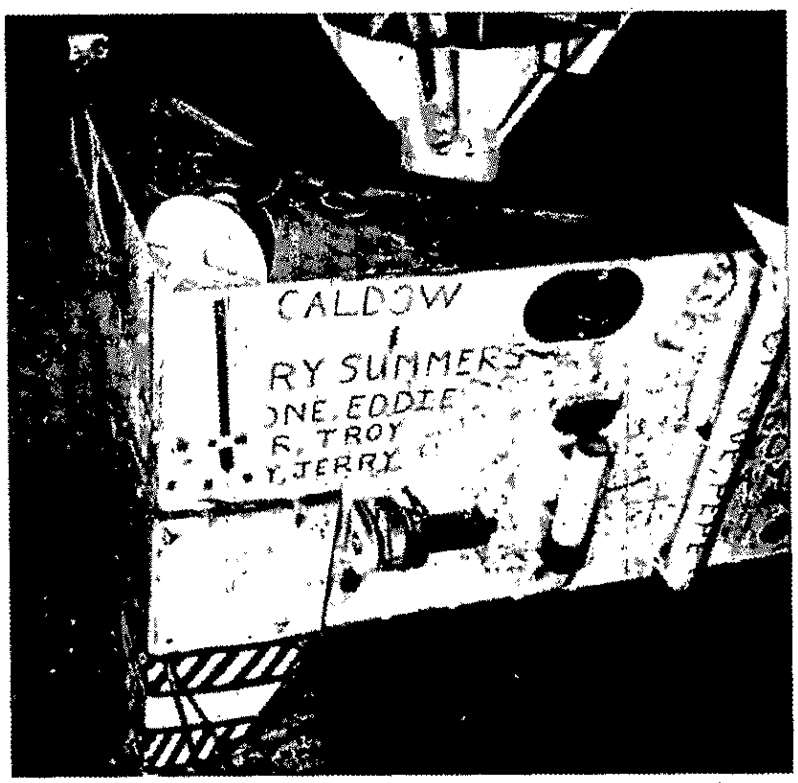
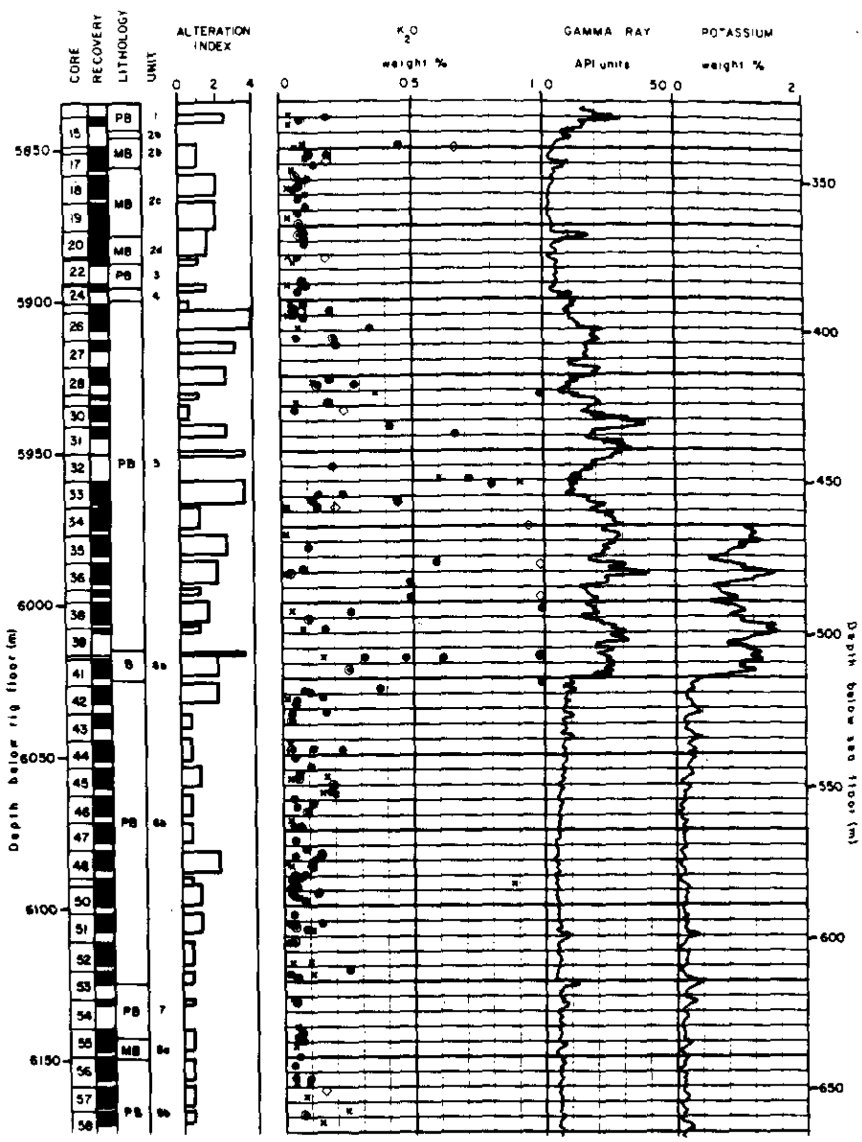
JOIDES Journal

VOL.XII,No. 3 OCTOBER 1986





Inside Cover: During Leg 102 a full suite of electrical, nuclear and sonic logs was run from the sediment-basalt interface at 324 m subbottom down to 789 m subbottom at Hole 418A on 110 m.y. old crust in the western Atlantic. The above illustration shows the alteration profile at 418A as obtained from core samples (x- Donnelly et al., 1979; ⊙- Emmerman and Puchelt, 1979; ●- Flower et al., 1979; ◊ -Humphris et al., 1979), logs and barrel sheets (Donnelly et al., 1979). The data show that alteration is very high in the upper part of the basement (K_2O, gamma ray & potassium data) and confirm the hypothesis that the crust at this site is sealed by alteration products within the pillow units (PB) and at the contact with massive basalts (MB). Therefore, the gradual infilling of fractures in pillow basalts decreases their porosity and increases their velocity, which results in a reduction in the thickness of seismic Layer 2A with age.

The figure is courtesy of C. Broglia and D. Moos, Lamont-Doherty Geological Observatory.

Front Cover: Oblique view of the Hard Rock Drilling Guidebase, deployed on Leg 106 and re-entered on Leg 109, as seen from the submersible ALVIN. Photo courtesy of S. Humphris and G. Thompson, Woods Hole Oceanographic Institution.

JOIDES Journal

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FOCUS

When I became the Chairman of the JOIDES Planning Committee, I knew that I would be glad when it was over, and I was right. There is an old soldier's saying, probably attributable to the winning side of any war you choose, that goes "I wouldn't have missed it for a million dollars and I wouldn't do it again for two." That about sums up my two-year tenure as PCOM Chairman. If the above analogy is correct, I guess I'm claiming that we "won the war"; but more than the winners have claimed victory and left the field in the past, and history is always the final judge. It does appear from my biased vantage-point, however, that a lot of us have a lot to be proud of over the past few years. What we now know as the Ocean Drilling Program started conceptually with the Conference on Scientific Ocean Drilling in 1981, now called COSOD-I. Soon after that, falling oil prices offered us the SEDCO-BP 471 as a nearly new, modern drillship at a bargain basement price. Complex and delicate negotiations by NSF and the JOIDES EXCOM brought the program to reality with Texas A&M as the new Science Operator and, in principle, a decade-long commitment from funding agencies.The new Science Operator in cooperation with SEDCO converted the SEDCO-BP 471 from a riser-carrying, oil driller into the JOIDES RESOLUTION with her seven-story laboratory stack and new drilling and logging capabilities. She went to sea in January, 1985 and has been in continuous operation ever since. While the ship was being converted and during the past two years the Planning Committee has put in place plans for drilling for the remainder of the 1980's, in fulfillment of the COSOD-I guidelines for long-term plans. COSOD-II is planned for next summer as the vehicle for post-1991 planning.

The people responsible for all of these accomplishments are too numerous to mention here in total, but I would like to single out four of them who over the years have been wellsprings of always solid, reliable, and often imaginative advice for me. The first was Allen Shinn of NSF who made the case for the SEDCO-BP 471 and helped immensely with COSOD-I. The other three have all been keystones in the present-day ODP and in my two years as PCOM Chairman. Tony Mayer, my Executive Assistant, gave me the "European view" of ODP and a corporate memory unmatched in short- or long-term detail and accuracy. Garry Brass of NSF gave me a scientist's insight into the minds of Washington bureaucrats and others whose thought processes required translation. Finally, Lou Garrison, the Deputy Director of ODP at TAMU, took the PCOM plans and "made them real."

Obviously my opening analogy is partially incorrect in that we have won a number of important battles, but the war goes on. Hundreds of scientists and ultimately thousands of students and technicians will be involved in ODP over its lifetime. It has been a pleasure to be a part of it. I have valued the opportunity and the experience. However, now I am especially glad to be able to say "So long, and thanks for all the fish."

Roger L. Larson
Roger L. Larson
Planning Committee Chairman

OPERATIONS SCHEDULE

OCEAN DRILLING PROGRAM
Legs 111-114

LEG	DEPARTS LOCATION	DEPARTS DATE	ARRIVES AT DESTINATION	ARRIVES AT DATE	IN PORT	OBJECTIVE	CO-CHIEF SCIENTISTS
111	Panama, Panama	28 Aug	Callao, Peru	21 Oct	Oct 21-25	DSDP Hole 504B	K. Becker H. Sakai
112	Callao, Peru	26 Oct	Callao, Peru	19 Dec	Dec 19-21	Peru Margin/ Upwelling Studies	R. von Huene E. Suess
112T	Callao, Peru	22 Dec	Punta Arenas, Chile	2 Jan 1987	Jan 02-03	Transit	--------
113	Punta Arenas, Chile	04 Jan	Falkland Islands	10 Mar	Mar 10-14	Weddell Sea	P.F. Barker J. Kennett
114	Falkland Islands	15 Mar	Mauritius	10 May	May 10-14	Sub-Antarctic So. Atlantic	P.Ciesielski J.LaBrecque

Revised 7/2/86

SCIENTIFIC OBJECTIVES FOR LEG 112

The following paragraphs are excerpted from the Scientific Prospectus for Leg 112 as prepared by the Ocean Drilling Program. Additional information may be obtained from Kay Emeis, Staff Science Representative for Leg 112 or Audrey Meyer, Manager of Science Operations. Both are located at Texas A&M University, College Station, Texas 77843-3469.

JOIDES RESOLUTION will depart Callao, Peru, on October 26, 1986 for Leg 112. The vessel is scheduled to drill a maximum of 27 sites along two transects crossing the Salaverry/Lima/West Pisco forearc basins and the Salaverry/Trujillo/Yaquina basins (Figs. 1 & 2). The sites span water depths from 100 m at the upper slope to 5000 m at the lower slope. The ship will return to Callao on December 19, 1986.

SCIENTIFIC OBJECTIVES

Operations during Leg 112 address the tectonic evolution of the Andean margin as controlled by subduction of the Nasca Plate and the paleoenvironmental record deposited on that margin under the influence of the Peru Current regime.

The timing and magnitude of vertical movements of the leading edge of the continental block, and the truncation of this block and accreted sediment wedges, are the general tectonic objectives, whereas the evolution of the classic coastal upwelling regime and its response to global changes of climate and sealevel are the major paleoenvironmental objectives. Both are intimately linked to each other in that the sedimentary sections in the forearc basins -- which record coastal upwelling -- have evolved through differential vertical tectonics.

Tectonic Evolution of the Continental Margin

The drill sites that address the tectonic objectives are located to define the extent and age of the continental crust, its paleobathymetry, and the extent of accretion of oceanic sediments landward of the trench axis. The continental crust of the Peru margin appears to have subsided and been truncated. A structure typical of accretionary complexes consisting of landward dipping reflectors is stacked in front of the inferred truncation scar. Samples from the boundary area between the accreted complex and the continental crust may help to establish the age, the prevalent stress field, and the tectonic processes associated with the erosion of the continent and the accretion of oceanic sediments.

In order to further understand the tectonic history of the forearc basins, it is essential that the metamorphic conditions that prevailed along the outer Andean and Peruvian forearc deposits be understood. Drilling at sites PER-7 or PER-6 beneath the seaward edge of the Lima Basin and at the truncated western edge of the continent at sites PER-8, PER-14, or PER-18 is expected to yield samples of the metamorphic basement.

Also, because the Peruvian forearc basin deposits contain abundant planktonic and benthic microfossils for biostratigraphic dating and paleodepth determinations, they are excellent records of vertical movements of the metamorphic terrain that forms the foundation of the Andean margin.

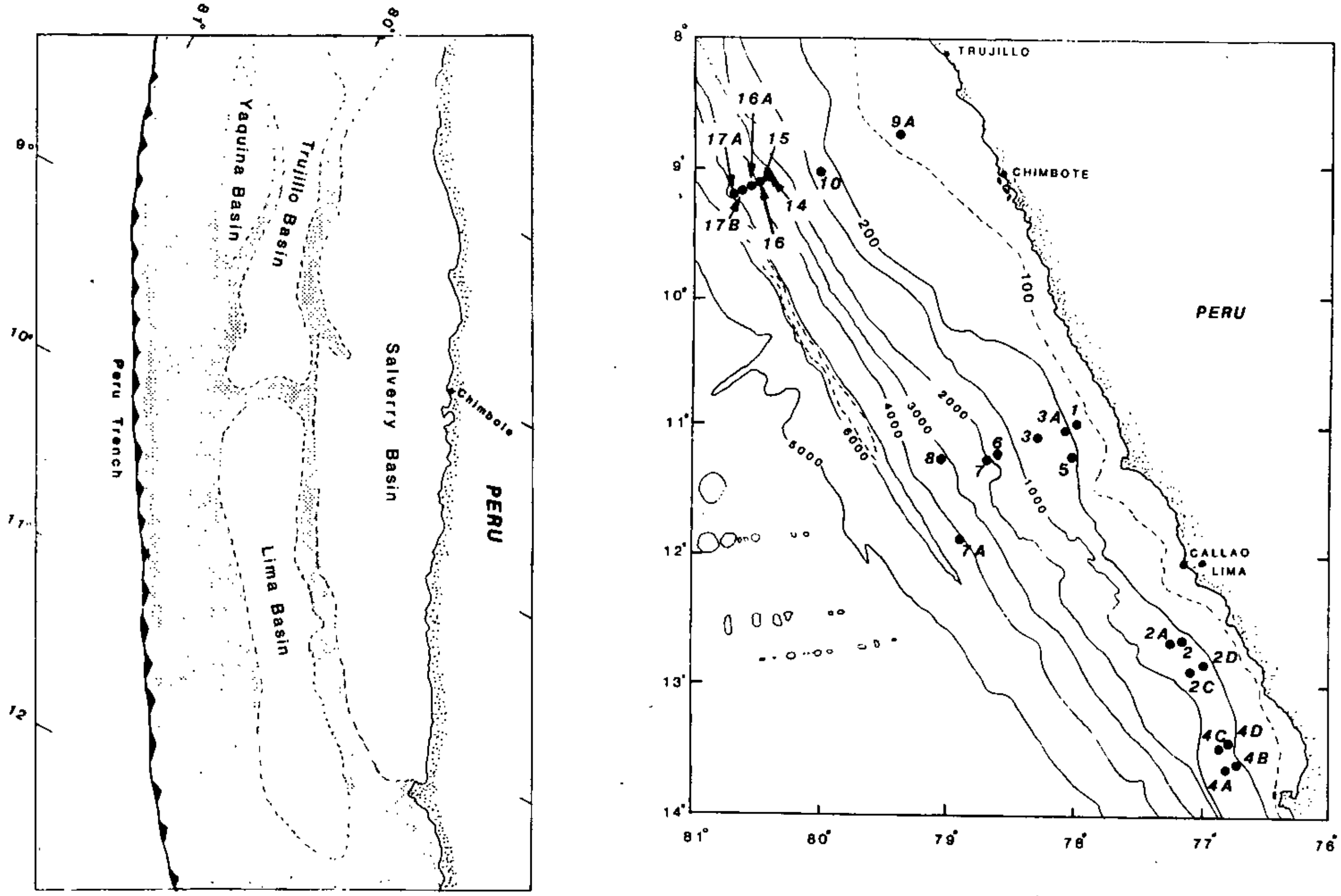


Figure 1. Location map of the major sedimentary basins along the Peruvian margin (West Pisco Basin is not shown) and the location of targets PER-1 through 17A. Water depth is in meters.

Drilling transects across the Lima and Yaquina basins will detect relative changes in subsidence of the respective seaward and landward flanks of each basin through time. Combining this information with radiometric age determinations and P/T conditions reconstructed from the metamorphic basement will aid in the evaluation of the interrelation of mechanical and metamorphic processes. Evidence for episodic volcanism and mineralization as recorded in the sedimentary sections may further aid in understanding the timing and mechanisms of forearc evolution. The emerging account of margin evolution can subsequently be compared with and tested against independent accounts concerning changes in the rate and the geometry of plate convergence along the entire margin.

The transition between the accretionary complex and the continent occurs in a zone 5 km wide which is west of the Yaquina Basin. At this location, it is believed that the continental margin has been truncated during specific phases of subduction and that the bulk of sediment on the oceanic plate may have been subducted instead of being accreted. Drilling in this transition zone will put constraints on the timing of the truncation and give evidence that the truncation phases may have been associated with volcanic activity, basin subsidence on the adjacent margin, and changes in plate motion. A wide variety of rocks from a large range of compositions and ages may have been incorporated into this complex during truncation events.

Paleoenvironment of Upper Slope Basins and the Peru Upwelling Regime

The drill sites for the paleoenvironmental objectives are located beneath the strongest wind-driven upwelling areas of the Peru Current regime. Today this region is situated along the upper continental slope at water depths between 150 and 500 m. The sediments are characterized by two distinct facies: an organic carbon-rich mud flow in carbonate which accumulates at the landward flank of the rapidly subsiding Lima Basin and a phosphorite-bearing calcareous mud which accumulates along the seaward edges of the tectonically more stable Yaquina and Trujillo Basins.

The sites have been selected to provide a continuous high-resolution sediment record of Quarternary and possibly older age in a three-dimensional framework. The main targets in the Lima/Salaverry Basin area are: PER-1, PER-2, PER-2A, PER-3, PER-3A, PER-4A, PER-4B, PER-5, PER-6 and PER-7, and Sites PER-9 and PER-10 in the northern basin. This comparison will provide an opportunity to test several models about fundamental oceanographic and sedimentary processes related to:

1) Identification of signals of coastal upwelling in the sedimentary record for a reconstruction of nutrient makeup and water column parameters of source waters (salinity, temperature, apparent oxygen utilization), upwelling ecology, biological zonation of the plumes, and erosional action of the poleward flowing undercurrent.

2) Quantification of the biogenic and biogeochemical flux for an evaluation of the interaction between sea level, climate, and ocean circulation.

3) Understanding the conditions that lead to the formation of dolomites in forearc basins with contrasting tectonic evolution.

4) Characterization of the geochemical environment leading to the formation of phosphorites in the northern and southern target areas in order to elucidate the validity of several models on phosphorite formation that have been applied to the Peru margin.

DRILLING PLAN

With a total of 27 sites arranged in three transects across the Peruvian margin (Fig. 1 and Table 1) these objectives will be addressed during 54 days of operations. Not all of these sites can be drilled during the time available, but priorities have been established to ensure that the overall scientific objectives of Leg 112 can be met. Operations time will be divided in an appropriate manner to address tectonic and paleoceanographic goals.

PER-1 through PER-5, in the Lima and West Pisco Basins, are sited to investigate the spatial and temporal evolution of the upper slope mud lens deposited under upwelling conditions. Sites PER-3 and PER-3A are scheduled to 600 m total depth in order to tie the shallow, double Advanced Hydraulic Piston Core (APC) sites on the upper slope to the deep holes on the lower slope. These sites on the lower slopes (PER 6 to PER 8) are intended to investigate tectonic subsidence of the margin. After drilling APC to refusal, it is proposed that hole PER-3 be deepened by Extended Core Barrel (XCB) and rotary coring to penetrate the deepest part of the Salaverry/Lima Basin hinge line.

PER-6 is sited on a lens-shaped Neogene sediment wedge and an underlying wedge of probably earliest Neogene and Paleogene age. This site or alternate sites PER-7 and PER-7A will yield a detailed subsidence history of the upper slope. At site PER-7 metamorphic basement is likely to be sampled. Site PER-8 is designed to sample metamorphic basement as close as feasible to the accretionary complex/crust transition. This site is expected to yield samples of the oldest sediments in the distal edge of the Lima Basin and of the metamorphic continental basement.

Along the northern transect (09°S) of proposed drill holes, two high priority sites for investigation of the upwelling facies have been identified in the outer shelf mud and the upper slope mud wedge, respectively (Sites PER-9A and PER-10). Here the sediment lenses are poorly defined, the facies is reworked and more calcareous.

A transect of two sites and three alternate sites seaward of these paleoceanographic targets are located to investigate the truncation, subsidence, and accretionary history of the margin. Sites PER-16 and PER-17 are targeted on the oldest accreted sediments; alternate sites PER-15, PER-16A, and PER-17A are located to bracket the sediment that records the end of tectonic erosion and the beginning of accretion in the event that the

TABLE 1
LEG 112 OCEAN DRILLING PROGRAM
LOCATION OF PROPOSED SITES ON THE PERU MARGIN

Site	Location	Water Depth	Penetration	Drilling
1	10°58.7'S/77°56.9'W	146m	200m	Double APC
2	12°39.1'S/77°09.0'W	293m	200m	Double APC
2A	12°41.8'S/77°12.3'W	375m	200m	Double APC
2C	12°54.2'S/77°01.7'W	371m	200m	Double APC
2D	12°51.3'S/76°59.2'W	287m	200m	Double APC
3	11°05.0'S/78°16.0'W	473m	600m	Double APC/XCB
3A	11°03.8'S/78°04.8'W	259m	600m	Double APC/XCB
4A	13°36.2'S/76°48.1'W	300m	200m	Double APC
4B	13°37.6'S/76°50.4'W	390m	200m	Double APC
4C	13°29.1'S/76°54.2'W	443m	200m	Double APC
4D	13°27.4'S/76°51.9'W	353m	200m	Double APC
5	11°12.0'S/78°01.4'W	250m	200m	Double APC
6	11°15.0'S/78°37.0'W	2010m	800-1100m	APC/RCB
7	11°17.0'S/78°40.4'W	2215m	1100m	APC/RCB
7A	11°85.0'S/78°86.0'W	1650m	1100m	APC/RCB
8	11°16.3'S/79°03.0'W	3825m	600m	Double APC/XCB
9A	08°47.8'S/79°37.7'W	100m	200m	Double APC
10	09°00.3'S/79°57.2'W	416m	200m	Double APC
14	09°02.9'S/80°27.4'W	3015m	850m	APC/RCB
15	09°02.9'S/80°27.4'W	3975m	900m	APC/RCB
16	09°05.0'S/80°32.0'W	4380m	1300m	APC/RCB
16A	09°06.0'S/80°33.9'W	4612m	790m	APC/RCB
17	09°06.6'S/80°35.3'W	5062m	1012m	APC/RCB
17A	09°07.4'S/80°37.1'W	5420m	1190m	APC/RCB
18B	05°37.1'S/81°33.5'W	3128m	1000m	APC/RCB
18C	05°37.4'S/81°36.0'W	3038m	960m	APC/RCB
18D	05°36.8'S/81°39.0'W	4200m	1250m	APC/RCB

Underlined: Tectonic targets. A,B,C,D denote alternative sites. The order of priorities for paleoceanographic targets is: PER-3, PER-1, PER-5, PER-2, PER-10, PER-11, PER-9; APC= Advanced Piston Corer, XCB= Extended Core Barrel; RCB= Rotary Core Barrel

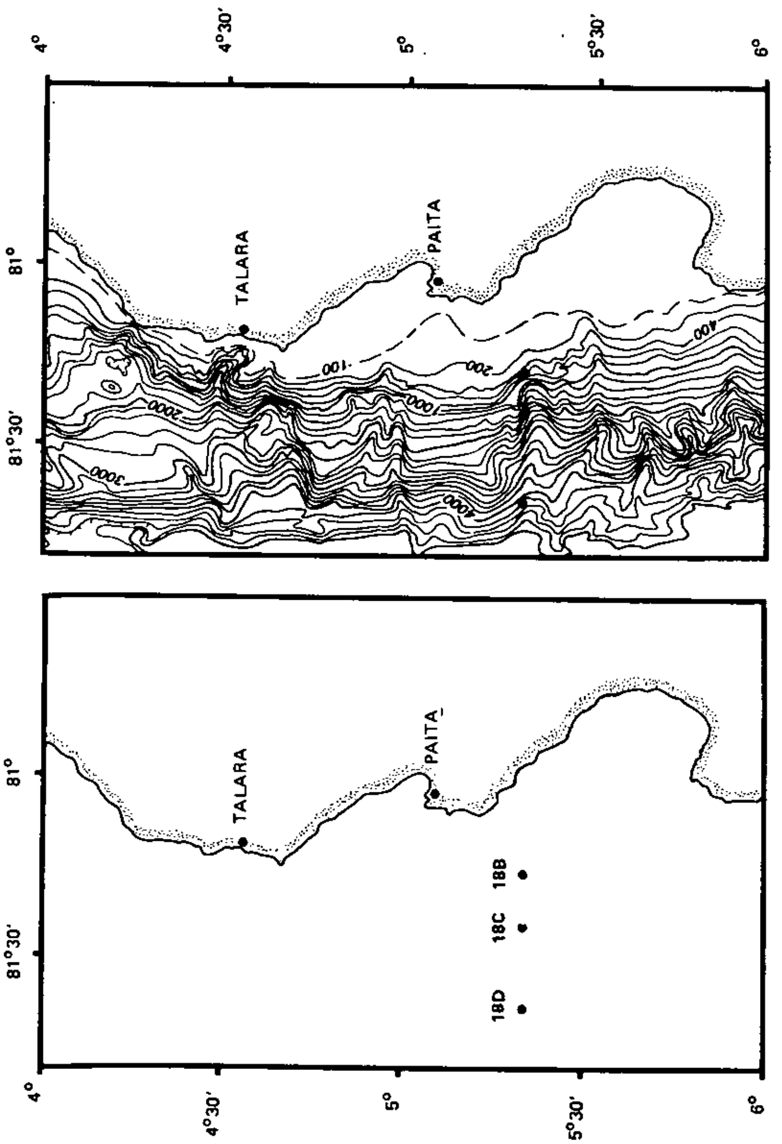


Figure 2. Location map of alternate targets 18B through 18D.

primary sites have failed to do so. If these sites fail to meet the objectives, a series of three alternate sites (PER-18B, C, and D) have been identified.*

Logging is planned at all sites that penetrate more than 400m.

* See Figure 2.

SUNSET

When th' evenin' sun's a-settin'
an me shipmates are a-wettin'
down their problems with a
little tot o' rum,

Then me cares are disappearin'
with th' tales that I'm a-hearin
as th' night, up from th' deep,
appears t'come.

Soon th' blackness of th' sea
starts t'sparkle back at me
with th' glitter of th' lonely
starry sky,

An' a risin' moons bright light
makes a pathway through th'
night as me ship, across th'
billows, seems t' fly.

It's th' nicest time of all
as th' night begins t' fall
and th' troubles of th' day
commence t' fade.

Then me tiny world, at least,
finds a welcome bit o'peace
just enjoyin' what th' Lord
above has made.

-N. Vino Veritas

(contributed by LEG)

SCIENTIFIC OBJECTIVES FOR LEGS 113 and 114

The following paragraphs are a summary of proposed drilling targets for Legs 113 and 114. Additional information may be obtained from Suzanne O'Connell, Staff Science Representative for Leg 113; Brad Clement, Staff Science Representative for Leg 114; or Audrey Meyer, Manager of Science Operations. All are located at Texas A&M University, College Station, Texas 77843-3469.

Leg 113, scheduled for January through early March 1987, will drill a series of paleoenvironmental and tectonic sites in the Weddell Sea (Figure 1).

The sites and objectives under consideration include:

Maud Rise (W1 & W2): Cenozoic-Mesozoic vertical water mass traverse in Antarctic waters in carbonate biogenic facies. Stable isotopic records at high southern latitudes; biostratigraphy; evolution; glacial history from ice-rafted sediment history; biogenic productivity.

Caird Coast (W4): East Antarctic margin drilling; Cenozoic-Mesozoic; paleo-reconstruction; margin sedimentary facies; climatic evolution; glacial development of the continent.

South Orkney Plateau (W6-8): Middle to Late Cenozoic vertical water mass traverse in intermediate to deep Weddell Sea. Development of Weddell Sea circulation and water mass structure during the Cenozoic; CCD history; biogenic evolution of siliceous and carbonate elements; stable isotopic history; glacial and climatic evolution.

Weddell Sea Basin (W5): First-order sediment changes in Weddell Basin in response to large-scale glacial and climate evolution of Antarctica through Cenozoic-Mesozoic time; timing of Antarctic Bottom Water production changes; basement age and paleotectonic implications.

Drake Passage (W11): Cenozoic climatic and paleoceanographic evolution; gateway problem; biogenic evolution in a siliceous regime.

Bransfield Strait (W10): Quaternary sediment history and biogenic productivity; organic and geochemical evolution in an unusual region of high organic marine (non-terrestrial) input, high heat flow and cold bottom waters.

Leg 114

Leg 114, scheduled for early March through early May of 1987, will drill sites in the sub-Antarctic South Atlantic (Figure 1). The leg addresses a variety of tectonic and paleoenvironmental objectives: 1) complete a mapping of the polar front migration begun by IPOD; 2) test and extend a plate tectonic model based on marine data and Seasat imagery for the development of the North Scotia Ridge and the Andean Orogeny; 3) determine the Late Cretaceous to Recent paleoenvironment for the critical passageway linking the South Atlantic and Weddell Basins; and 4) examine the development of ocean crust along a flow line from the generation of dual aseismic ridges at pseudofaults to a steady state seafloor spreading.

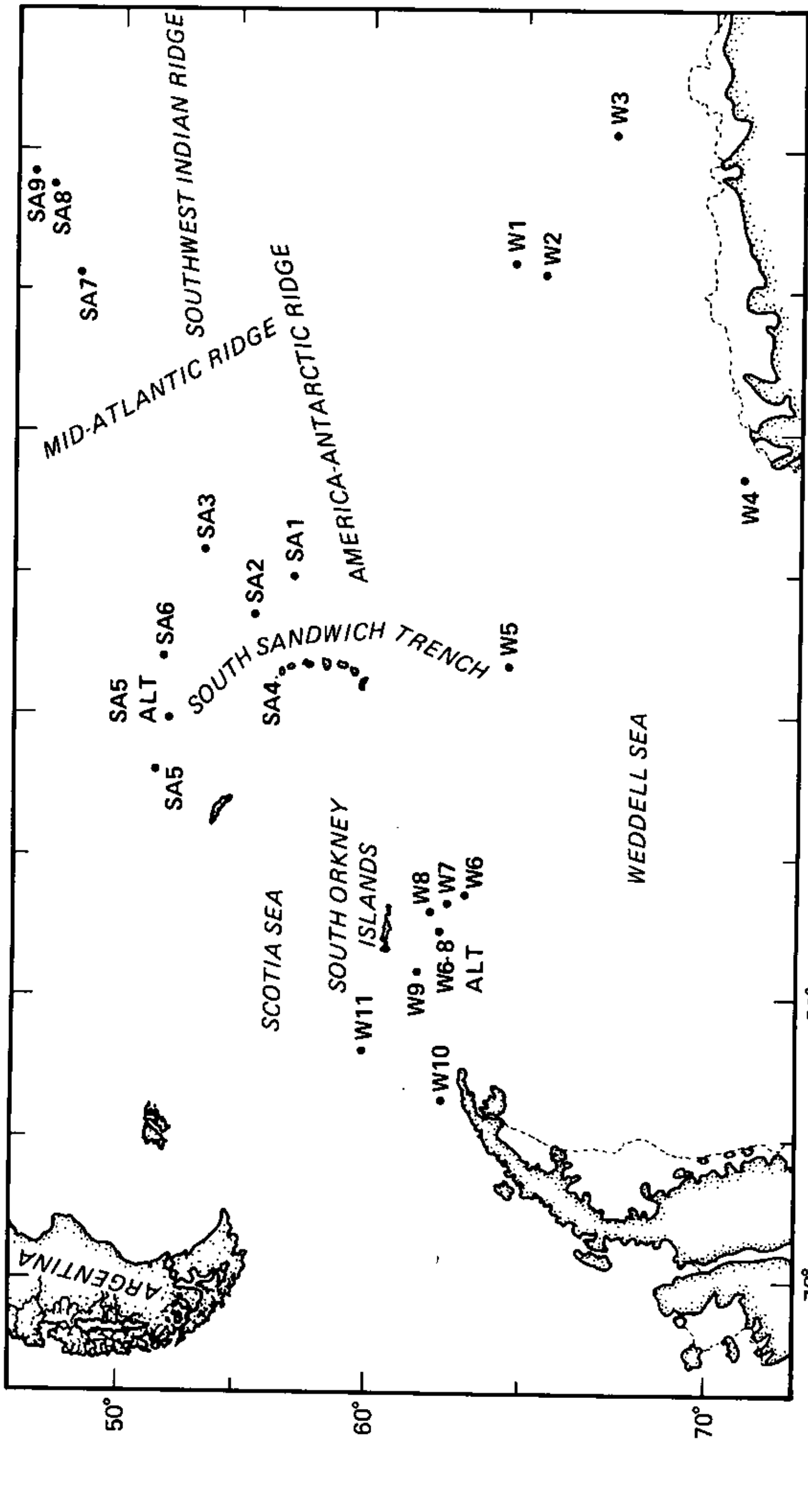


Figure 1 Legs 113 and 114 Proposed Drilling Locations: Weddell Sea and South Atlantic

Sites under consideration include:

East of South Scotia Trench (SA-1, SA-2, SA-3): History of Polar Front development and migration; early/mid Paleogene-Neogene Antarctic Bottom Water record; vertical water mass history.

South Sandwich Forearc (SA-4): Vertical motion in the upper forearc of a very young, simple subduction zone.

Northeastern Georgia Rise (SA-5): History of Northeast Georgia Rise as impediment to deep water circulation; geochemical development of an island arc complex; sample mid-Cretaceous and younger pelagic sediments in comparison to those of the Falkland Plateau.

Islas Orcadas Rise (SA-6): History of Islas Orcadas Rise as impediment to deep water circulation in Late Cretaceous-Paleogene; origin and age of basement as constraint on tectonic models; obtain previously unrecovered portions of Antarctic stratigraphic record; subsid history as compared with Falk Plateau; geochemistry of aseis ridge volcanism; subsidence aseismic ridges.

Late Eocene Flank of mi Atlantic Ridge (SA-7): Antarct Bottom Water development in th southeast Atlantic; compare wit DSDP Legs 3 and 73 transect.

Meteor Rise (SA-8): Paleoenvironmental differences between South Atlantic and Atlantic-Indian Basins; subsidence history of Meteor Rise with respect to deep circulation history; geochemistry of aseismic ridge volcanics; Cenozoic carbonate record.

Agulhas Basin (SA-9): Sedimentation and paleoenvironment prior to and after formation of ocean rise system in Weddell Basin; part of latitudinal transect with SA-8.

Site surveys are being conducted during the late summer and early fall of 1986 for final site selection.

ODP SCIENCE OPERATOR REPORT

CRUISES AND SITES COMPLETED

Leg 110

Introduction

Leg 110 drilling was planned to address the problems concerning the geohydrological and structural styles associated with an active accretionary margin by coring, logging, and performing a series of downhole experiments within the Barbados forearc (Figure 1). RESOLUTION sailed from Bridgetown, Barbados, on 26 June, 1986, and returned on 16 August. Five drilling locations (Figure 2) on the Lesser Antilles forearc formed a transect of sites perpendicular to the accretionary front (Sites 671, 673,674, 675, and 676). Site 672, a reference hole located on the oceanic plate, was drilled and logged. Site 675, on the lower Barbados forearc near DSDP Site 542, was drilled primarily to perform a packer test of the decollement zone. Results from drilling at these sites complement results from DSDP Leg 78A, which drilled three sites in the same region during 1981.

Site 671

Four holes were drilled at Site 671 (15°31.55' N, 58°43.95'W) in a water depth of 4936 m at a location about 4 km landward of the Barbados deformation front. Hole 671A was a jet-in test hole to determine the 20 in. casing point. Hole 671B was the first hole ever to completely penetrate the detachment surface between two converging plates. Holes 671C and 671D were drilled for packer tests and logging, neither of which were achieved due to hole conditions and equipment limitations.

Drilling at Site 671 was limited to 690 m subbottom by early Oligocene age unconsolidated quartz sand. A 500 m thick offscraped sediment section composed of Pleistocene to lower Miocene hemipelagic locally ashy mud, mudstone, calcareous mud (stone), and marl (stone) accumulated on the Tiburon Rise above significant transported terrigenous input. Major thrust faults in the offscraped section were cored at 128 and 447 m subbottom.

A 40 m thick decollement zone is located in sheared radiolarian claystone and marked by anomalies in porewater calcium, chloride, magnesium, and methane, and contrasts in physical properties and lithologies. Advection along the decollement explains the chemical gradients and possibly the thermal gradient of 43°C/km measured here.

Little deformed Oligocene and older sediments are underthrust below the decollement. Sediments are composed of claystone and mudstone with cyclic variations of carbonate and terrigenous input. Quartzose fine grained sands and silts are probably derived from South America. The sands at the base of Site 671 also show porewater anomalies suggesting these can also be dewatering conduits for underthrust sediments.

Site 672

Hole 672A (15°32.4' N, 58°38.46'W) was drilled in 4973 m of water as the reference hole against which to compare sediments cored in the Barbados forearc. Operations recovered (from the seafloor down to a depth of 494 m subbottom) Quaternary to Eocene calcareous mud(stone),

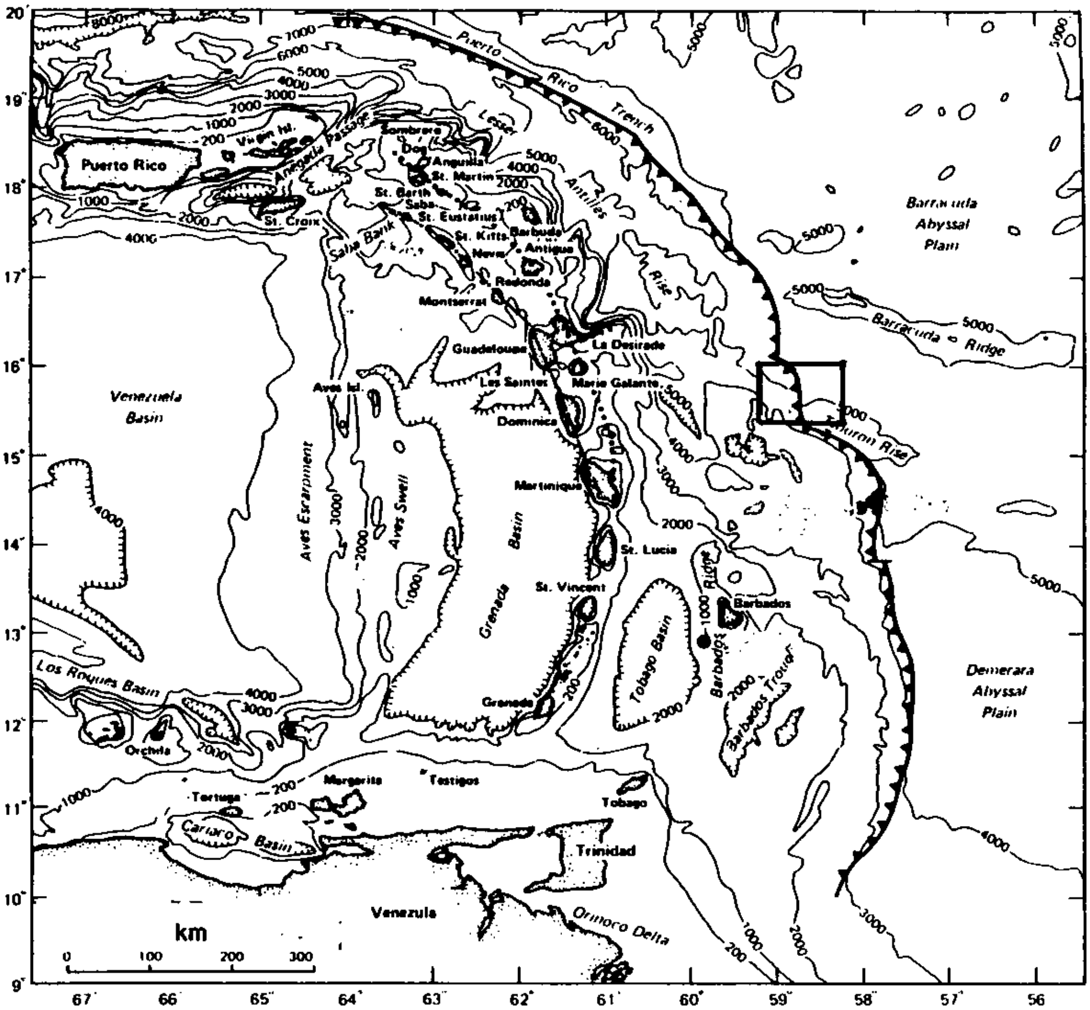


Figure 1. Eastern Caribbean (Bathymetric contours 200 and 1000 m)
Insert is the location of Leg 110 drill sites.

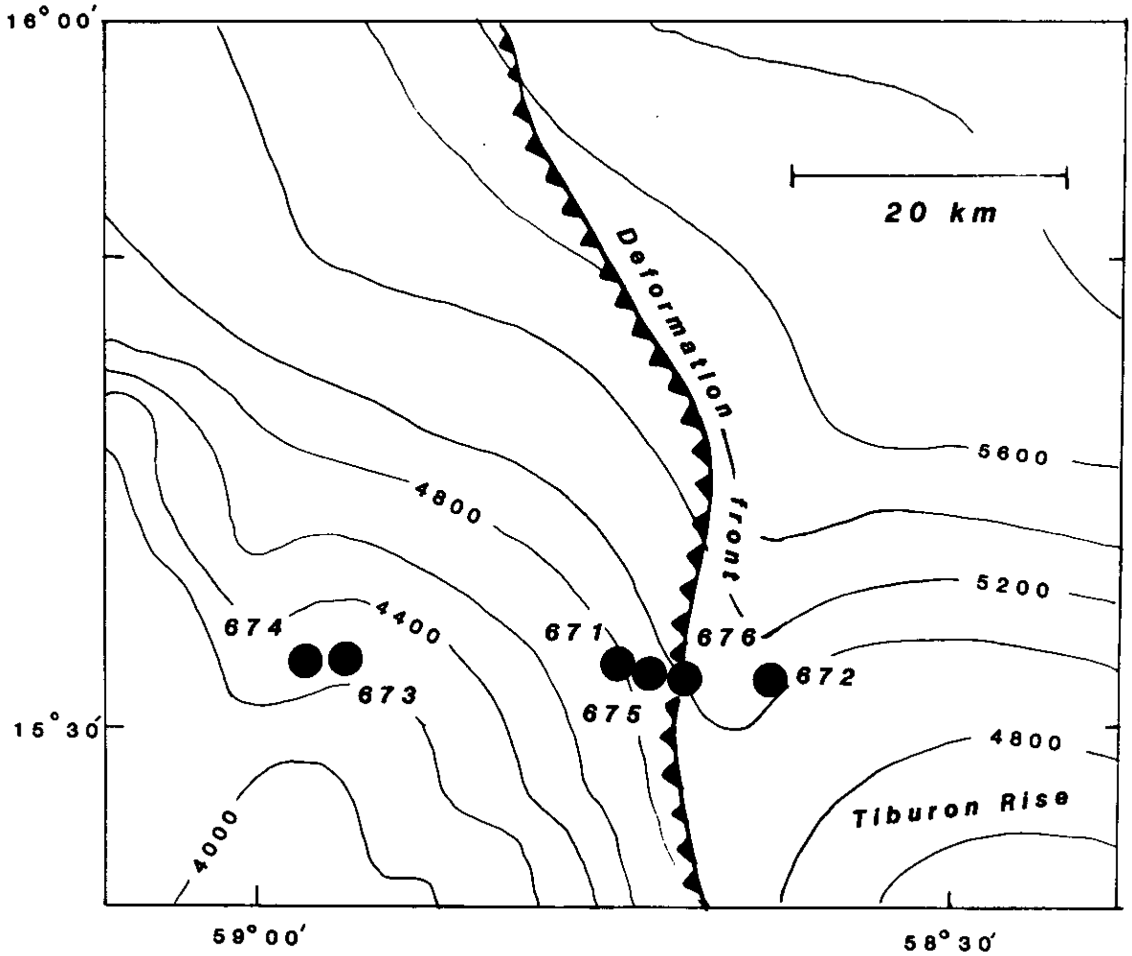


Figure 2. Location of Leg 110 drill sites along the Barbados forearc. Depth is in meters.

radiolarian mudstone, and interlayered mudstone, marl, limestone and sandstone.

Normal faults prevail in most of the cored section but en echelon veins and reverse faults occur in a lower Miocene 20 m thick interval. These deformational features are interpreted as anincipient shear zone related to an anomalously high porosity interval and probable decrease in sediment strength. The zone correlates stratigraphically with the top of the decollement at Sites 671 and 541. A prominent high methane content at a depth broadly related to the shear zone requires lateral advection.

The Oligocene to Eocene section of mud, marl and sandstone records mixing of sediment from three distinctive sources: 1) hemipelagic muds deposited insitu; 2) reworked calcareous-rich intervals probably derived from the top of Tiburon Rise; and 3) quartzose sands from South America. These sands are probably transported by bottom currents from the south. The currents upon topping the Tiburon Rise lose energy leading to the deposition of entrained clastics.

A high temperature gradient of 79°C/km and porewater anomalies suggest lateral advection occurs at several levels within the sedimentary section at Site 672. Apparently the hydrologic regime of these oceanic sediments is disturbed even though they are located 6 km east of the deformation front.

Site 673

Site 673 (15°31.92' N, 58°48.39' W) was located at a water depth of 4689 m in an area 13 km west of the deformation front in order to examine the continuing structural and hydrologic evolution of offscraped deposits. The upper 70 m of Hole 673B penetrated a thin Pleistocene and Pliocene section of marl and calcareous mud with local slide blocks of Miocene mudstone, suggesting active slope erosion and resedimentation. Lower Miocene mudstone and radiolarian mudstone comprise the sediments to the base of the hole at 330.6 m subbottom. This extraordinarily thick section is composed of steeply dipping sedimentary beds, a number of thrust faults and a 50 m thick overturned stratigraphic sequence.

Anomalously low chloride concentrations occur immediately below the first biostratigraphically documented thrust fault at 70 m subbottom, and persist through the thick overturned section suggesting active lateral fluid advection. At a slightly greater depth in the repeated Miocene section carbonate-filled veins suggest previous advection along tectonically induced fractures.

The substantial repetition of the early Miocene section indicates that deformation within offscraped packages is important in the overall thickening of the accretionary prism. Correlation with the seismic section suggests most of the weak and discontinuous landward dipping reflectors in the prism are related to major thrust zones dipping 15° toward the west.

Site 674

Site 674 (15°32.29' N, 58°51.09'W) is located at a depth of 4550.2 m in an area 17 km west of the Barbados Ridge deformation front. The main objectives were to study the continuing structural and hydrologic evolution of offscraped deposits and to compare these deposits with sequences of similar age previously drilled at the toe of the complex (Site 671) and in the Atlantic plain (Site 672). The site penetrated 3 major tectonic units composed of sediments ranging in age from early Pleistocene to middle Eocene:

Unit A (0-101 m subbottom) includes Oligocene (and Miocene ?) claystone and mudstone with a cover of upper Pliocene and lower Pleistocene calcareous claystone.

Unit B (101-253 m subbottom) encompasses Miocene and Pliocene claystone and mudstone with steep (and locally overturned ?) bedding dips and scaly fabrics.

Unit C (253-452 m subbottom) comprises Eocene-Oligocene (and Miocene ?) claystone and mudstone, plus an alternating sequence of limestone, marl, claystone and sandstone of middle Eocene age. This unit shows intense deformation with biostratigraphically documented overturned beds, and prominent development of scaly fabric and calcite veins. These three units are separated by recent low angle thrust faults which apparently postdate the internal deformation of each unit.

The presence of Oligocene and Eocene series in the accreted complex demonstrates that the decollement has been at a deeper stratigraphic depth than the present frontal one. The water content of these offscraped sediments is still 20-40% of their total weight and their porosity about 40-60%. The chloride content shows a slight progressive decrease with depth with a narrow negative anomaly close to the surface (40 m subbottom) and several positive anomalies in tectonic Unit C. None of these geochemical anomalies seems to be related to major thrust faults, as they were at the previous sites.

Eight downhole temperature measurements were made and indicate a gradient of 28^{0}C/km between 90 and 470 m subbottom. This value is much lower than the anomalously high gradient (143^{0}C/km) encountered at shallower depth at Site 674 and other sites downslope (where only the upper section had been sampled).

Site 674 provides unique insight of the intensively deformed rocks developed at a degree of low consolidation. These sedimentary rocks were accreted a few million years ago and have continued deforming upslope as the deformation front propagated seaward. This site will serve as a link between present accretionary processes, as observed at Site 671, and past accretionary complexes as exposed on Barbados Island.

Site 675

Site 675 (15^{o}31.77' N, 58^{o}43.01'W) in 5008.1 m of water is positioned on the lower Barbados Forearc near DSDP Site 542. The purpose of drilling here was primarily to perform a packer test of the decollement zone. A single hole, Hole 675A, penetrated 388 m subbottom, taking a core at the mudline and coring the final 67 m in preparation for the packer test. The mudline core consists of lower Pleistocene foraminifer-nannofossil ooze (unit 1). From 321 to 363 m subbottom operations encountered barren mudstone and claystone (unit 2), below which we penetrated 25 m of locally siliceous lower Miocene mudstone (unit 3). Orange-brown portions of unit 3, with black manganese concentrations, lithologically resemble the top of the decollement zone at Site 671. The lower Miocene radiolarian zones in Cores 675A-7X and -8X correlate well with the top of the decollement zone at Site 671.

Prominent zones of scaly fabric occur at about 335 m subbottom and 360-378 m subbottom and are believed to correlate with the frontal thrust and the top of the decollement zone, respectively. Relative low chloride and high methane concentrations within or adjacent to both of these deformation zones suggest that they are loci of active fluid transport. Rhodochrosite occurs in shear veins lying in, and dilatant veins cutting across, the scaly fabric of the lower deformation zone. The fill must have precipitated under near lithostatic fluid pressures that maintained the open veins.

Similar to the patterns in stratigraphically equivalent rocks at Sites 671 and 672, a local porosity high (70%) occurs just above the inferred decollement. Sediments at Site 675 have an estimated in situ velocity of 1.61 km/sec which is consistent with their relatively high overall porosity. The low consolidation state and the active dewatering of the sediments at Site 675 produced hole-stability problems which prevented any packer test.

Site 676

Located only 250 m west of the deformation front and at a water depth of 5059.6 m, Site 676 (15°31.849' N, 58°42.198' W) was designed to explore the incipient stages of accretion. Here, lithologic unit 1 (0-168 m subbottom) consists of calcareous mudstone and claystone, marl, and ash layers of upper late Miocene to Pleistocene age. At the probable level of the frontal thrust (25-55 m subbottom), conspicuous folding occurs in Pleistocene sediments with some bedding dips as steep as 75°. A second discrete thrust fault with folded scaly fabric occurs at 155 m subbottom at the Miocene/ Pliocene boundary. Unit 2 (168-263 m subbottom) comprises middle and upper Miocene claystone and mudstone with ash beds. Calcareous nannofossils occur in the upper half of unit 2. At 206 m subbottom a biostratigraphically defined thrust fault with 30 m of throw is associated with a scaly zone. The lower portion of unit 2 includes traces of radiolarians that cannot be zoned. Seismic stratigraphic data suggest that this fault is very recent and probably is propagating upward and forward from the decollement. Unit 3 (263-310 m subbottom) is composed of lower Miocene claystone, siliceous mudstone and ash layers. At 270-280 m subbottom this unit includes a zone of incipient horizontal shearing which may represent a seaward forerunner of the decollement.

Physical properties at Site 676 are very similar to those at the reference Site 672. The porosity profile is repeated at about 40m subbottom and is indicative of the frontal thrust fault. The magnetic susceptibility profiles are also repeated below 40 m subbottom. Anomalously high temperatures in this interval suggest lateral flow of relatively warm fluid through this fault zone.

High values of methane occur at four depths; three of these anomalies correlate well (within the limits of sampling) with the three main structural features of the hole. A methane anomaly at 33 m subbottom is probably related to the fault near this level defined by physical properties and magnetic susceptibility data. The high methane content at 190 m subbottom is adjacent to the thrust that gives rise to the repeated late Miocene section. The high methane anomaly at 286 m subbottom is adjacent to the incipient shear zone of the propagating decollement. A low porewater chloride concentration is observed only at 250 m subbottom and does not correlate with any structural feature.

The scientific party aboard JOIDES RESOLUTION for Leg 110 consisted of:

J. Casey Moore, Co-Chief Scientist (UCSC); Alain Mascle, Co-Chief Scientist (France); Elliott Taylor (TAMU); Francis Alvarez (L-DGO); Patrick Andreieff (France); Ross Barnes (Rosario Geosci. Assoc.); Christian Beck (France); Jan Behrmann (F.R.G.); Gerard Blanc (France); Kevin Brown (Durham Univ.); Murlene Clark (Univ.of So. Alabama); James Dolan (UCSC); Andrew Fisher (Univ. of Miami); Joris Gieskes (SIO); Mark Hounslow (U.K.); Patrick McClellan (Canada); Kate Moran (Canada); Yujiro Ogawa (Japan); Toyosaburo Sakai (Japan); Jane Schoonmaker (HIG); Peter Vrolijk (UCSC); Roy Wilkens (MIT); Colin Williams (L-DGO).

ODP ENGINEERING

DRILL STRING STUDIES

A variety of test cases have been run using the TAMU heave motion software package. Problems encountered when some of the options in the program were exercised have been solved after extensive debugging. The data input format has also been slightly modified. With the exception of the spectrum analysis option, the code is now fully operational.

An analytical model has been developed to study the longitudinal resonant behavior, induced displacements and dynamic tensions in the drill string. This continuous model can be used to cross check the results from the discrete model (i.e., TAMU heave motion package) and to study the effect of parametric variations of drill string length, thickness, package weight and damping. Limited comparisons of the results from the two models show good agreement in natural frequencies. More extensive comparisons are planned. An additional enhancement of the analytical model to account for variations in material properties and dimensions along the drill string is currently under way.

An organizational meeting was held to discuss the objectives for FY 1987. The following items were identified as requiring immediate attention:

(a) Completion of the spectrum analysis and plotting package.

(b) Improvement of the heave compensator model.

(c) Introduction of a drill excitation option.

(d) Documentation of the software.

NAVI-DRILL CORE BARREL (NCB)

Engineering has reviewed a preliminary proposal by Norton Christensen for continued development of the "slim hole,"wireline retrievable, mud motor coring system (NCB-2). Efforts are being made to correct any deficiencies in the original design prior to fabrication of the NCB-2 prototype. The concept presented by NC eliminates the fluid spring components that proved to be troublesome during Leg 104 sea trials. Core headload in the new design will be applied by hydraulic force. The coring system will remain compatible with APC/XCB bottomhole assembly and is designed to recover a nominal 15' core. By drilling ahead through the XCB bit the coring system will remain totally supported throughout the coring operation. This system is also being evaluated as a potential low cost option for hardrock "unsupported" spudding operations. Detailed engineering design and testing is scheduled for completion by December 1986. Sea trials will take place on Leg 114 (April/May 1987).

PRESSURE CORE BARREL (PCB)

Refurbishment of the two PCB systems inherited from DSDP is complete up to the point of ordering new spare parts, replacing a few of the old parts and hydrostatically testing the pressure chambers and ball valves. Those last steps are being delayed pending evaluation of need for the PCB on foreseeable legs.

DRILL PIPE INSPECTION

The records from the drill pipe inspection conducted in Barbados by Baker Tubular's "Scanagraph" system have been returned to TAMU and forwarded to Dr. Rod Stanley, a tubular inspection consultant. His analysis suggests that the inspection was generally well done by Baker. He has pointed out a number of follow-up investigations that could be performed on the downgraded pipe joints that are being returned to TAMU. Some of these suggestions will be carried out to better understand how ODP operations result in drill pipe degradation.

SIDE ENTRY SUB (SES)

The SES was removed from the ship during Leg 110. The impact properties of the material the SES was made from were determined to be below the minimum specified values. Retesting of the chemistry however verified that the sub was made from 4340 as required. The SES was re-heat treated in an effort to obtain impact properties that meet the minimum values specified. There-heat treating process was developed from laboratory heat treating and metallurgical testing conducted with samples taken from the original material of the SES. Re-heat treatment of the SES did not yield the impact properties required.

In the event the SES failed in service, serious losses (drill string) would be incurred. A new

SES will be manufactured meeting ODP specifications.

HIGH TEMP CORE LINERS

The high bottomhole temperatures anticipated during coring operations at Hole 504B on Leg 111 require a plastic core liner that can function beyond the limits of the current butyrate liners (about 165° F). A survey of available plastics suitable for extruding 33-foot long tubes has been conducted. A new plastic from General Electric, "Ultem," was chosen that has a service temperature rating to almost 400° F. Forty-eight Ultem core liners (transparent, amber color) have been made for use and evaluation on Leg 111.

HYDRAULIC BIT RELEASE (HBR)

Re-design of the HBR is complete and machine drawings are in preparation. The new parts will be compatible with the existing bit disconnects and go-devils that represent the bulk of the previous monetary investment in hardware. Sea trials for the latest design are scheduled for Leg 113 (Jan/Feb. 1987).

HARD SEA FLOOR SPUDDING SYSTEM

The hard rock base site (Hole 648B) established on the Mid-Atlantic Ridge during Leg 106 was reoccupied during Leg 109. Initial drilling and coring removed cement fill left during Leg 106. The hole was advanced from 33.3 m to 50.5 m sub-bottom, a total increase in depth of 17.2 m. Core recovery within the interval advanced was approximately 2.19 m, for a total recovery rate of 12.7%. Much of the time spent in the hole was devoted to atempts to stabilize the hole with cement and in re-drilling fill. Stabilization seems to have been accomplished with the casing. Further attempts at coring and deepening the hole were abandoned because all compatible drilling jars had been damaged in operations at this site.

The following important points should be given consideration when addressing future hard rock drilling and coring operations. The positive displacement motors (PDCM) are not recommended for POGO drilling on Leg 115. The core barrels and latch system repeatedly failed while being used in Holes 669A and 670A. Increasing the core barrel wall thickness would result in significantly reducing the core size (1 1/2 - 1 3/4 inches in diameter), thus further reducing the already poor core recovery (4-8%) when coring fractured rock. A significant expenditure would be required to make modifications to the core barrel system and build new bits with the reduced core size required. The effectiveness of these modifications is very questionable based on the performance of the motors to date. The large expenditure for the modifications required for deployment of the PDCM on Leg 115 would therefore be difficult to justify.

If POGO sampling is required for Leg 115 either a rotary core barrel or an extended core barrel can be driven with a positive displacement drill motor (PDM). A traverse across the sea floor could be done using this method but the core barrel would have to be tripped out of the hole each time to recover the samples. Once a site has been selected, a hole could be spud-in using a drill motor with a conventional bit. A free fall "mini" reentry cone could then be dropped and coring commenced with a conventional rotary coring system. However this method should be considered developmental and a whole leg cannot at present be planned around these techniques. Reentry into a small diameter free fall rentry cone has been accomplished only twice and success is considered to be extremely weather dependent. The effectiveness of spudding in unsupported with the drill motors and making reasonable progress has been shown to be very dependent on the type of formation being drilled.

If the second hard rock guide base is deployed in the near future it will be necessary to use existing hard rock drilling/coring techniques. To prevent an outcome similar to that at Hole 648B, a site more stable lithologically should be considered.

Significant improvements in hard rock drilling/coring technology will require long term engineering development on a scale of two to five years. Prior to planning a leg or a large portion of a leg around new developmental hard rock drilling equipment and techniques, testing on land in similar fractured basalt formations should be considered.

FREE-FALL REENTRY CONE

A small reentry cone has been developed by ODP as a low-cost means of salvaging (through the use of the TV reentry system) the objectives of single-bit holes that develop problems. The TV system is capable of detecting and presenting a much less prominent target than the sonar system can detect. The new cone is simply installed around the drill string as soon as drilling in the hole is no longer viable with the existing bit. The cone is then free-dropped to the seafloor, using the drill string as a guide, before the drill string is pulled from the hole. A successful deployment of a "mini-cone" and subsequent reentry were made during Leg 108.

Potential applications of the new cone include a "second chance: capability in planned single-bit holes in the event of a bit failure, plugged bit, stuck inner core barrel, etc., or as a means of logging holes which could not have been logged because of an obstruction in the pipe or failure of the bit release mechanism. It also has the potential for allowing packer operations in single-bit holes while avoiding the undesirable practice of drilling with a packer in the string.

The free-fall cone is very new and it comes with no guarantees. Its success is highly dependent upon the nature of the seafloor sediments. As there is no conductor or surface casing, the hole is subject to closing in by collapse of the soft upper sediments. It could be "swallowed" by a large crater or dragged out of the hole by a clay ball on the drill collars.

It is our intention to keep one or two free-fall reentry cones aboard the drillship at all times as a low-cost "insurance policy" for the deeper single-bit holes. The following guidelines are in effect for the deployment of free-fall cones:

1. The free-fall cone should be used only when its deployment

would represent a significant savings in rig time over drilling a new hole. (Hole conditions deteriorate with time and circulation.)

2. Because of the risk of losing the hole, the bit should never be pulled clear of the seafloor/cone unless it has been determined that the objectives cannot be achieved without a reentry. For example, coring should continue if core is being recovered, even if there are signs of bit failure.

3. The hole and cone always should be observed with the reentry TV as the drill string is pulled clear, to ascertain that the cone is left in a reenterable condition.

4. The existence of free-fall cones should not be a consideration in scientific and operational planning--at least until there is a body of practical experience. ODP sites generally should continue to be planned as either single-bit holes or as dual-casing reentry installations.

ODP SCIENCE SERVICES

PUBLICATIONS

Part A (Initial Reports) of the Proceedings of the Ocean Drilling Program volumes for Legs 101 and 102 are in press, and those for Legs 103, 104, and 105 are now in production. Because of earlier funding problems, publication is about nine months behind the original schedule. ODP Publications has decided to combine the Part A portions of the Leg 101 and 102 volumes under one cover for maximum efficiency, principally because the latter, which gives the results of a logging leg, is too short to be bound separately. This book will be distributed at the end of November 1986. Single Part A volumes are planned for Legs 103, 104, and 105; these are presently being edited and typeset. For calendar year 1987 ODP Publications is adopting an accelerated production schedule for Part A books so that we will be back on our original schedule by the end of the year.

Production of the Part B portion of the Proceedings, which will begin next year, will commence on schedule.

Earlier this year a Kurzweil 400 optical character reader was installed to allow the department to capture many Part B manuscripts electronically and process them editorially on-line, as we do the Part A manuscripts that come to us from the ship in diskette form. Hard copies of manuscripts that are prepared using standard IBM or equivalent fonts can be put through this system, thus saving a considerable amount of keyboarding time.

A more recent purchase is an electrostatic plotter, which had been sorely needed to break the logjam in turning out "barrel sheets" caused by our existing Hewlett-Packard plotter.

We have hired about 60% of our total departmental personnel, and we expect to have our total complement of staff in place by this time next year, when we will swing into full production of Part B, or Final Reports, of the Proceedings of the Ocean Drilling Program. One of our staff members merits special mention: Ray Silk, who was Production Manager for DSDP for 13 years, joined us in May of this year and has put

WIRELINE LOGGING SERVICES OPERATOR REPORT

The following report includes excerpts from Leg 109 Preliminary Report and a report on Leg 110 logging results as conducted at the Borehole Research Group at L-DGO. Further information may be obtained by contacting Dr. Roger Anderson or Richard Jarrard. Both are located at the Borehole Research Group (BRG), Lamont-Doherty Geological Observatory, Palisades, N.Y. 10964.

SUMMARY OF LOGGING RESULTS FROM LEG 109 (MARK-II)

Site 395

In addition to deepening the hole at Site 648B along the axis of the Mid-Atlantic Ridge (MAR), one of the objectives of Leg 109 was the logging of DSDP Site 395 on 7.3 m.y. old crust on the western flank of the MAR.

Logging results show that the uppermost 380 m of basement at Site 395 is quite heterogeneous and composed primarily of 10-50 m thick pillow basalt units. Several distinct flow units are also present. Units are delineated by both their physical properties and neutron activation measurements of Ca, Al, Fe and Si. Sections of the borehole with sharply higher porosity and lower resistivity values may correspond to unit boundaries. Physical properties vary on the scale of a few meters; compressional velocities vary between 3 and 5 km/sec., densities between 2.4 and 2.7 gm/cc, porosities between 10 and 20 percent and resistivities between 10 and 100 ohm-m. From 320 to 500 m depth, compressional velocity increases to more than 5 km/sec., densities are greater than 2.6 gm/cc, porosities are less than 15 percent and resistivites increase to 200 ohm-m. This change is gradational and due primarily to an increase in the degree of cementation of the pillows.

Magnetic susceptibility in the uppermost 500 m of basement is somewhat low and is remarkably constant throughout the logged interval, due to the constant size of titanomagnetite grains. A few zones near the top of the basement section have higher susceptibilities. Magnetometer results reveal a reversal in the remanent field at a unit boundary located 150 m into basement.

Vigorous downward flow of ocean bottom waters at the site has depressed in-situ temperatures in the upper 300 m of basement, suggesting that this interval is highly permeable and that pore pressures are below hydrostatic values. Similar results were seen in young crust at DSDP Site 504 (Anderson and Zoback, 1982; Becker et al., 1983; Williams et al., 1986), but in Hole 395A the downward flow has persisted, whereas flow in Hole 504B has steadily decreased. Although downward flow into Hole 395A is restricted to the uppermost few hundred meters (the temperature gradient indicates purely conductive heat transport in the lowermost sections of the hole), packer flow tests of the lowermost 210 m and 80 m demonstrate that high permeabilities persist to greater depths. In fact, permeability in the upper 500 m of Hole 395A is greater than permeability in the uppermost 200 m of Hole 504B.

These results suggest that most of Hole 395A was drilled through the highly porous, permeable low-velocity pillows of seismic Layer 2A, before penetrating the gradational boundary between Layers 2A and 2B.

Overall, Leg 109 was very successful in logging Hole 395A, thereby establishing a third geophysical reference section to complement results from the two other deep basement holes (418A and 504B).

SUMMARY OF LOGGING RESULTS FROM LEG 110 (Barbados Forearc)

While the drilling program of Leg 110 saw successful penetration and sampling of the active basal decollement of the Barbados accretionary prism, unstable hole conditions (mainly resulting from the highly disturbed and unconsolidated nature of sediments comprising the prism) plagued the attempts to make in-situ geophysical measurements. Specifically, two experiments with the ODP drill-in packer failed because of torn bladders and three open hole wireline logging attempts only yielded a series of short (10-30 m) runs with a Schlumberger Caliper-Resistivity-Sonic velocity tool string and the Lamont Multichannel Sonic tool string.

Despite the abbreviated nature of the logging measurements, a number of valuable observations were possible, especially when comparisons were made with core sample physical properties measurements. In the past, some doubt has been expressed regarding the accuracy of physical properties measurements in describing the in-situ condition of samples. However at all three logging sites (671, 672 and 676), the sonic velocities measured by both the Schlumberger Long Spacing Sonic tool and the Lamont Multichannel Sonic tool matched core velocities within a range of 50 m/sec. This implies that the Physical Properties measurements from Leg 110 are highly accurate (at least for sonic velocity) and thus more than suitable for such post-cruise studies as synthetic seismic modeling.

From the log measurements, two valuable observations are immediately available, one concerning the spatial extent of near lithostatic pore pressures within the prism and the other concerning the physical conditions which favor the development of a decollement surface.

Sonic velocity logs are commonly used in the petroleum industry as indicators of abnormal pore pressures. By a comparison of the sonic logs from Site 671 (along the toe of the prism) with the logs from Site 672 (an oceanic reference site located 2 km east of the deformation front), Leg 110 hoped to delineate the degree of overpressure present within the prism. This comparison yielded the unexpected result that, over the studied interval (100-150 m subbottom), the pore pressures at the two sites were identical. A number of possibilities are available to explain this, but the shipboard scientific party appeared to favor two: that the excess pore pressures at the toe of the prism are confined to depths greater than 150 m subbottom (with the decollement at approx. 500 m subbottom) or that elevated fluid pressures exist for some distance beyond what is typically identified as the deformation front.

Another result from Site 672 involves the formation of what is referred to in the site reports as the "future decollement". Measurements made with the Lamont Multichannel Sonic tool over the stratigraphic interval corresponding to the future decollement show a clear stepwise decrease in slowness (Figure 1). This indicates that the decollement forms along the basal contact of a body of higher porosity clay-rich sediments with a stronger, less porous layer. The great abundance of radiolarians within this zone suggests that they may be responsible for maintaining this high porosity against increasing overburden pressures. If such a conjecture is true, then these controls on the location and formation of the decollement can be tied not only to the activities of some of the smallest creatures known to mankind but also to the climatic and environmental fluctuations of the past.

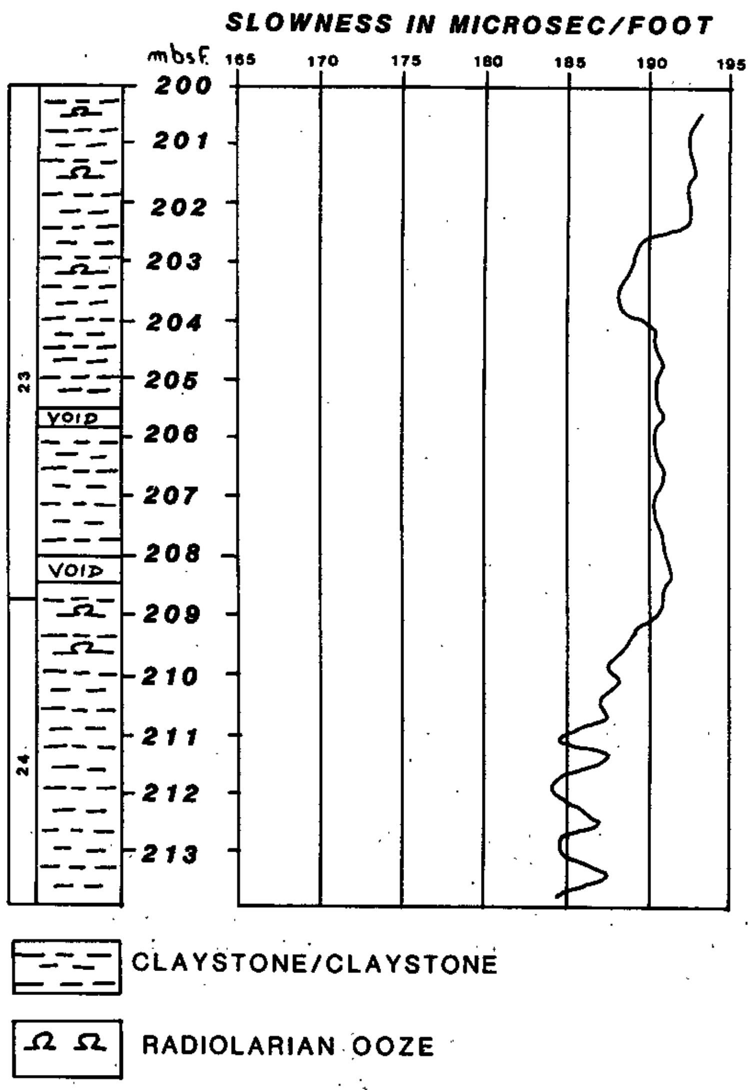


FIGURE 1

ODP DATABANK REPORT

The JOIDES/ODP Databank received the following data between June 1986 and August 1986. For more information concerning the ODP Databank, please contact Carl Brenner at the Lamont-Doherty Geological Observatory, Palisades, N.Y.

From S. Dang (HIG): Petro Peru MCS seismic #'s 1700, 1900, 1000, 2025 and 2800, Peru Margin area.

From P. Barker (UK): MCS seismic lines 15, 16, 17 and 18, Weddell Sea.

From T. Thornburg (OSU): All 3.5 kHz and single channel seismic profiles documenting the Leg 112 (Peru Margin) paleoenvironmental sites.

From K. Lighty (ODP/TAMU): Digital geophysical data merged with navigation, for RESOLUTION Leg 103, in MGD77 format, along with microfilm of seismic data.

From R. Searle (UK): GLORIA sonar data in the area of selected proposed Red Sea drillsites.

From Y. Kristoffersen (Norway): Multichannel seismic and 3.5 kHz data in the Maud Rise area.

From D. Hussong (HIG): Large-sized prints of SEAMARC II sidescan sonar mosiacs offshore Peru, with bathymetric overlays.

From M. Langseth (L-DGO): Three heatflow profiles in the North Barbados Forearc (Leg 110) area. Also various geophysical maps (sediment thickness, basement temperature, bathymetry and heat flow) of the immediate area of site 504B, compiled after THOMAS WASHINGTON ODP survey, and large display of 3.5 kHz and MCS records over the site.

From J. Mutter (L-DGO): Preliminary stacked CONRAD MCS records 485 and 497, in the area of DSDP/ODP site 504B.

From T. Brocher (USGS): Migrated version of CONRAD MCS record 485, over site 504B.

From R. von Huene (USGS): MCS lines 1,2,3,4,15,16 and 17 with navigation, collected during JEAN CHARCOT ODP survey off the Peru Margin.

From C. Brenner (L-DGO): Regional bathymetric contour map of the 504B area, to use as base map for Leg 111 co-chief data package.

From R. Schlich (France): Updated site location maps, core and dredge locations and descriptions, velocity data and various isopach maps, Kerguelen Plateau area.

International Phase of
Ocean Drilling

JOIDES COMMITTEE REPORTS

PLANNING COMMITTEE REPORT

11-15 August 1986

The following paragraphs are highlights from the August 11-15, 1986 meeting of the JOIDES Planning Committee.

SHORT-TERM PLANNING

Leg 113 (Weddell Sea)

For Leg 113, ODP has contracted with A.P. Moeller in Copenhagen for an ice-support vessel. The vessel is capable of dynamic positioning, can carry a crew of 8-9 with additional berths for approximately 20 and in the case of an emergency, can provide space to handle the entire crew of RESOLUTION. Also, an ice observer will be included as a part of the support vessel's crew.

In addition to ice observation duties, the support vessel will support two scientific studies during Leg 113. The co-chief scientists for Leg 113 and the Science Operator have agreed that proposals by D. Biggs (TAMU) to conduct plankton biological studies and by P. Barker (UK) and L. Lawver (Univ. of Tex.) to conduct a series of magnetometer tows in the region should be included into the cruise plan for the support vessel. PCOM agreed that these scientists should be considered as members of the Leg 113 science party and that the data collected by them should be integrated into the total data set for the leg.

Leg 114 (Sub-Antartic South Atlantic)

The PCOM recommended that if Leg 113 does not achieve the objectives planned for Site W7 on the South Orkney traverse (a high priority site which should be done early in the transect) then they should be accomplished on Leg 114. However, if these objectives are achieved on Leg 113, then Leg 114 should proceed as planned with its South Atlantic objectives.

MEDIUM RANGE PLANNING

Site Surveys

Successful site survey cruises have been conducted for the Neogene I area by W. Prell (Brown Univ.) and No. 90° E Ridge and the Intraplate Deformation area by J. Curray (SIO). Site surveys are scheduled in the near future for the Makran area by the UK, the Broken Ridge/ So. 90° E Ridge area and the Southwest Indian Ridge. Site surveys are pending for the Red Sea.

At this meeting, PCOM reiterated its support for the plans outlined for the Red Sea in the hope a site survey would be conducted at 17.5° N. However, PCOM decided that if these data could not be obtained then it would devise a Red Sea leg based on present site survey information. PCOM asked TAMU to continue to seek permission to operate in the area with a deadline for final decision set for late January 1987. PCOM also requested that the FRG continue attempts to obtain site survey clearance for METEOR.

The schedule for Indian Ocean drilling with two optional plans remains as given in Table 1 (Page 62) of the June 1986 JOIDES Journal.

LONG RANGE PLANNING

For the Western Pacific drilling program, PCOM accepted the draft WPAC as its current operational document but is referring it to the three thematic panels for their views on how successfully this plan addresses the thematic objectives for the region. This draft plan is shown in Table 1. Discussion is now underway in PCOM and the advisory panels on the development of a plan for the remainder of the Pacific and, particularly, those proposals which could be logistically interleaved with West Pacific drilling.

TABLE 1

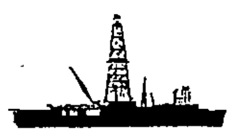
1. Bonin-1
2. Japan Sea
3. Sunda Backthrusting
4. Banda-Sulu-So. China
5. Bonin-Mariana-2
5. Great Barrier Reef
7. Nankai
8. Lau Basin
9. Vanuatu
10. Zenisu Ridge (1/2 leg)
11. Sulu Transect

PROPOSALS RECEIVED AT THE JOIDES OFFICE BETWEEN 1 JUNE AND 31 AUGUST 1986

NEW AND REVISED PROPOSALS

Ref. No.	Date Rec'd.	Title	Investigator(s)	Inst.	Site Survey Avail' Data	Site Survey Future Need	Panel Reference	PCOM Reference	Remarks
				ATLANTIC OCEAN					
254/A	8/27/86	Black shales in pelagic realm (N.W.Africa)	Parrish,J.T. Tucholke,B.	USGS WHOI	Yes	Yes	ARP 8/86 SOHP 8/86		USSAC Black Shales W'shop
255/A	8/27/86	Black shales in the Gulf of Guinea	Herbin,J-P Zimmerman,H.	IFP France NSF	No	Yes	ARP 8/86 SOHP 8/86		USSAC Black Shales
				INDIAN OCEAN					
226/B	5/1/86	Neogene evolution of the pelagic carbonate system & deep circulation of the equatorial Indian Ocean	Prell,W. Peterson,L.	Brown U. Miami U.	Some	Yes	IOP 5/86 SOHP 5/86		Rel. to 77/B & 97/B Rev'd 8/86
240/B	6/10/86	Extended drilling in the Argo Abyssal Plain	Gradstein,F.	Geol.Surv. Canada	Yes	No	IOP 6/86 TECP 6/86 SOHP 6/86		Rel.to 121/B Rev'd 7/86
246/B	7/7/86	Mesozoic upwelling off the S.Arabian Margin	Jansa,L.	Geol.Surv. Canada	Yes	Yes	SOHP 7/86 IOP 7/86		Rel. to 93/B & 94/B
251/B	8/18/86	Drilling in the Seychelles-Mascarene-Saya de Malha region	Khanna,S.V.	Seychelles Nat. Oil Co.	No	Yes	IOP 8/86 TECP 8/86 LITHP 8/86		See 173/B
				SOUTHERN OCEANS					
244/C	7/7/86	Drilling in the western Ross Sea	Cooper,A.K. Webb,P.N. Davey,F.J. Barrett,P.J.	USGS Ohio S.U. DSIR,N.Z. Wellington U.N.Zeal'd	Some	Yes	TECP 7/86 SOHP 7/86 SOP 7/86		USSAC South Pacific Workshop Rev'd 8/86
				WEST PACIFIC					
51/D	3/5/84	ODP proposal for scientific drilling in the Sea of Japan	Tamaki,K. Honza,E. Kagami,H. Kobayashi,K.	Geol.Surv. ORI Tokyo Japan	Yes		WPAC 7/85 LITHP 7/85 TECP 7/85		See Props. 149/D & 151/D.Revised 7/85.Mature prop. Rel.to 168/D &198/D Supp.rec'd 6/86 Japanese Workshop
149/D	07/01/85	Active spreading centre of the Sea of Japan:Yamoto Basin	Kimura,M. Kato,Y. Yamamoto,S.	U. of the Ryukyus, Japan	Some	Yes	WPAC 7/85 LITHP 7/85 TECP 7/85		Rel.to 51/D & 151/D Rev'd 6/86 Japanese W'shop
235/D	6/2/86	Problems of arc-trench development rel. to collision, back-arc spreading & slow rate subduction in the Solomon Sea plate region	Honza,E. Sandy,M. Crook,K.A.W. Tiffin,D.L.	Geol.Surv. Japan Geol.Surv. Papua/N. Guinea ANU Australia CCOP/SOPAC	Some	Yes	WPAC 6/86 TECP 6/86 SOHP 6/86		Expansion of part of 146/D COGS-2 super-proposal Rel.to 191/D & 222/E
239/D	6/9/86	Two sites in the Lau Basin	Cronan,D.S.	Imp.Coll. London,U.K	Some	Yes	WPAC 6/86 TECP 6/86 LITHP 6/86		Rel.to 170/D
242/D	6/16/86	Backthrusting and back arc thrusting in an arc-continent collision zone:eastern Sunda Arc	Silver,E.A. Reed,D.L.	UCSC	Yes	Yes	WPAC 6/86 TECP 6/86		See 127/D
243/D	6/20/86	Drilling the outer Tonga Trench	Bloomer,S.H. Fisher,R.L.	Duke Univ. SIO	Some	Yes	TECP 6/86 WPAC 6/86 LITHP 6/86		
				CENTRAL & EASTERN PACIFIC					
234/E	6/2/86	Kinematics of plate coverage along the eastern Aleutian Trench	von Huene,R. Fisher,M. Wang,C. Moore,C. Keller,G.	USGS UCBerkeley UCSC UPrinceton	Some	Yes	CEPAC 6/86 TECP 6/86 SOHP 6/86		USSAC NORPAC W'sho Rel.to 213/E & 214/E
236/E	6/2/86	Drilling in the northern Gulf of Alaska	Bruns,T.R. Fisher,M.A. von Huene,R.	USGS	Yes	Yes	CEPAC 6/86 TECP 6/86 SOHP 6/86		USSAC NORPAC W'sh Rel. to 210/E
237/E	6/2/86	N.E.Pacific active margin off Vancouver Island	Brandon,M.T. Yorath,C.J.	Geol.Surv. Canada	Yes	Some	CEPAC 6/86 TECP 6/86 SOHP 6/86		INPAC W'shop Rel. to 233/E
241/E	6/13/86	Drilling the Yakutat Block, Gulf of Alaska & Zodiak Fan, Aleutian Abyssal Plain	Heller,P.L.	U.Wyoming	Some	Yes	CEPAC 6/86 SOHP 6/86 TECP 6/86		USSAC NORPAC W'sh Rel.to 210/E & 234/E
245/E	7/7/86	Drilling the transform margin of California	Howell,D.G. et al.	USGS	Yes	Yes	TECP 7/86 SOHP 7/86 LITHP 7/86 CEPAC 7/86		

247/E	7/11/86	Oceanographic,climatic and volcanic evolution of the N.E. Pacific Ocean	N.Pisias R.Duncan D.Rea T.Pedersen B.Bornhold	OSU U.Michigan Univ.B.C. Geol.Surv. Canada	Some	Yes	LITHP SOHP TECP CEPAC	7/86 7/86 7/86 7/86		INPAC Workshop Rel. to 221/E
248/E	8/8/86	Deep sea drilling on the Ontong-Java Plateau	Ben-Avraham,Z. Nur,A.	Stanford U.	Some	Yes	WPAC CEPAC TECP LITHP	8/86 8/86 8/86 8/86		Rel. to 222/E
249/E	8/8/86	Sedimentation in the Aleutian trench	Underwood,M.B.	U.Missouri	Some	Yes	CEPAC SOHP TECP	8/86 8/86 8/86		USSAC NORPAC W'shop Rel. to 234/E
250/E	8/14/86	Lithofacies & depositional cyclicity,Navy deep sea fan, California borderland	Underwood,M.B.	U.Missouri	Some	Yes	SOHP TECP CEPAC	8/86 8/86 8/86		
252/E	8/14/86	Study of the Loihi (Hawaii) seamount	Staudigel,H. Garcia,M. Malahoff,A.	SIO HIG	Yes	Some	LITHP CEPAC	8/86 8/86		
253/E	8/27/86	Palaeoceanography of organic C-rich black shales in the ancestral Pacific (Shatsky Rise)	Schlanger,S. Sliter,W.	N.Western U. USGS	Yes	Some	CEPAC SOHP	8/86 8/86		USSAC Black Shales W'shop
				GENERAL & INSTRUMENTAL						
155/H	07/01/85	Downhole measurements in the Japan Sea	Suyehiro,K. Kinoshita,H. Kanazawa,T. Yamamoto,K.	Chiba, U. Tokyo,U. Tohuku,U. Japan	Yes	Yes	WPAC DMP TECP LITHP	7/85 7/85 7/85 12/85		Japanese Workshop Supplement rec'd 6/86
238/F	6/9/86	Pore pressure in the Makran subduction zone	Wang,C. von Huene,R.	UCBerkeley USGS	N/A	N/A	DMP IOP TECP	6/86 6/86 6/86		Rel. to 55/B



JOIDES/ODP BULLETIN BOARD

1986/1987 MEETINGS SCHEDULE

Date	Place	Committee/Panel
30 Sept-2 Oct	Strasbourg	COSOD-II Steering Committee
15-16 October	Sidney, British Columbia	EXCOM
20-22 October	Ann Arbor	CEPAC & SOHP
27-28 October	Narragansett, RI	Kerguelen Working Group
29-30 October	Narragansett, RI	SOP
29-31 October	Ottawa	TECP
4-6 November	Villefranche	SSP
7-8 November	Tokyo	DMP
20-22 November	Miami	IOP
13-15 December	Stanford, CA	WPAC
6-7 January	London	LITHP & CEPAC
18 January	Hawaii	Panel Chairmen's Meeting
19-23 Janaury	Hawaii	PCOM (Annual Mtg. with Panel Chm.)
18-20 February*	College Station	IHP
28-30 April	Washington, DC	EXCOM (& ODP Council)
9-11 September*	Palisades, NY	IHP

*Meeting dates are tentative.

NEW JOIDES CHAIRMEN

The following people were recommended and have accepted the post of Committee or Panel Chairman to these panels/committees:

-Executive Committee-

Dr. Douglas Caldwell
College of Oceanography
Oregon State University
Corvallis, OR 97331
(503) 754-4763

-Planning Committee-

Dr. Nicklas Pisias
College of Oceanography
Oregon State University
Corvallis, OR 97331
(503) 754-2600

-Central and Eastern Pacific Regional Panel-

Dr. Seymour Schlanger
Department of Geological Sciences
Locy Hall
Northwestern University
Evanston, IL 60201
(312) 491-5097

-Southern Oceans Panel-
(as of 1 November 1986)

Dr. Peter Barker
Department of Geological Sciences
University of Birmingham
P.O. Box 363
Birmingham B15 2TT, U.K.

ODP/TAMU JOIDES PANEL LIAISONS

The following ODP/TAMU staff scientists have been assigned to liaise with JOIDES panels for planning purposes:

LITHOSPHERE PANEL- Andrew Adamson

SEDIMENTS & OCEAN HISTORY PANEL- Amanda Palmer

TECTONICS PANEL- Christian Auroux

DOWNHOLE MEASUREMENTS PANEL- Suzanne O'Connell

INFORMATION HANDLING PANEL - Russ Merrill

POLLUTION PREVENTION AND SAFETY PANEL- Lou Garrison

SITE SURVEY PANEL- Robert Kidd

ATLANTIC REGIONAL PANEL- Jack Baldauf

CENTRAL & EASTERN PACIFIC REGIONAL PANEL- Elliot Taylor

INDIAN OCEAN PANEL- Brad Clement

SOUTHERN OCEANS REGIONAL PANEL- Lou Garrison

WESTERN PACIFIC REGIONAL PANEL- Audrey Meyer

TECHNOLOGY AND ENGINEERING DEVELOPMENT COMM.- Barry Harding

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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

JOIDES JOURNAL MAILINGS

As of 1 July 1986, Joint Oceanographic Institutions Inc. (JOI) will be handling the mailings of the JOIDES Journal. Please notify JOI with any changes or additions to the mailing list or if you have not received your copy of the Journal:

JOI Inc.
1755 Massachusetts Ave., NW
Suite 800
Washington, DC 20036
Telephone: (202) 232-3900
Telex: RCA number 257828 (BAKE UR UD)
Telemail: J.Baker

*****

CHANGE OF ADDRESS

Note that as of 1 October 1986, the JOIDES Office will be located at the College of Oceanography, Oregon State University, Corvallis, Oregon 97331 and may be reached at the following telephone, telex and telemail addresses:

Telex (RCA #): 258707
answerback- JOID UR UD

Telemail: JOIDES.OSU

Telephone: (503) 754-2600

ANNOUNCEMENT:

Beginning in Fall 1986, Dr. Audrey Meyer will replace Dr. Robb Kidd as the Manager of Science Operations at ODP Headquarters, Texas A&M University, College Station, TX.

ANNOUNCEMENT

OF A WORKSHOP TO DEVELOP SCIENTIFIC DRILLING INITIATIVES IN THE

SOUTH ATLANTIC

(from the equatorial fracture zones to the Atlantic margin of the Antarctic)

Convener: James A. Austin, Jr.
University of Texas Institute for Geophysics
4920 North I.H. 35
Austin, Texas 78751-2789

Place: Woods Hole Oceanographic Institution
Woods Hole, Massachusetts

Time: first half of April, 1987 (exact time to be announced)

Written expressions of interest should be directed to the convener. Limited JOI/USSAC travel/subsistence support is available for U.S. participants.

CALL FOR PAPERS

DEEP STRUCTURE AND PAST KINEMATICS OF ACCRETED TERRAINS
IUGG General Assembly, August 9-12, 1987
Vancouver, B.C.

The object of this symposium is to consider the concept that large amounts of todays continents evolved as a result of the accretion of displaced terrains. This type of tectonics is particularly apparent in modern fold-mountain belts, but could also apply to older (even Precambrian) fold belts and hence may have been a general process by which continental crust is formed. For more information, contact:

E. Irving
Pacific Geoscience Ctr.
9860 W. Saanich Rd.
Sidney, B.C.
CANADA V8L 4B2

D.B. Stone
Geophysical Inst.
Univ. of Alaska
Fairbanks, Alaska
99775-0800 USA

Legs 101 through 105 Databases

ODP databases for Legs 101 through 105 are available to the public as of October, 1986. Anyone who wishes to make a request can do so by calling or writing the ODP Data Base Group. Please contact Kathe Lighty at (409)845-2673 at the Ocean Drilling Program, 1000 Discovery Drive, College Station, Texas 77840.

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The twelve-month moratorium on samples distributed after a cruise has expired for Legs 101-105. Approved requests for materials from these cruises no longer require contribution to the Proceedings volumes. This includes cores collected on the Bahama Banks (101), Galicia Bank (103), in the Norwegian Sea (104), and in Baffin Bay and the Labrador Sea (105). Leg 102 did not collect core materials.

Preliminary sample record inventories for ODP Legs 101-106 and 108 are now in searchable database structures.

Investigators requiring information about the distribution of samples and/or desiring samples should address their requests to:

The Curator
Ocean Drilling Program
P.O. Drawer GK
College Station, TX 77841

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PUBLICATIONS FROM ODP PUBLIC INFORMATION OFFICE

Two new publications are available from the Public Information department. "Engineering and Drilling Operations" describes the function of the department, description of drilling systems and future developments.

A new cruise application form features a description of the program, dimensions and characteristics of JOIDES Resolution, scientific facilities, cruise planning, and participation and responsibilities of shipboard scientists.

For copies, write:

Karen Riedel
Ocean Drilling Program
Texas A&M University
College Station, TX 77843-3469
U.S.A.

AVAILABLE DSDP DATA

Data file: legs available	Data source	Description	Comments
Part 1. Lithologic and stratigraphic data			
Paleontology: 1-85	*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 12,000 fossil names and codes.	Does not include Mesozoic fossils. No data for Leg 83.
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: 4-83	Shipboard Data *Initial Reports*	Petrographic descriptions of igneous and metamorphic rocks. Includes information on mineralogy, texture, alteration, vesicles, etc.	Legs 4-36 and 43 are available. No data for Legs 1-3, 5, 8, 9, 15, 20-21, 24, 27, 40-41, 42B, 44, 47-48, 50, 56, 71-72, 75-76, 78, 80, 95, 96.
Visual Core Descriptions: 1-96	Shipboard data	Created from shipboard descriptions of the core sections. Information about core color, sedimentary structures, disturbance, etc.	
Visual Core Descriptions - igneous rocks: 4-94	Shipboard data	Igneous and metamorphic rock lithology, texture, structure, mineralogy, alteration, etc.	No data for Legs 40, 42B, 44, 47-48, 50, 56, 95, 96. Legs 22-94 available in digital form.
SCREEN: 1-96	Processed data	Computer generated lithologic classifications. Basic composition data, average density, and age of layer.	
Part 2. Physical properties and quantitative analytic core data			
***Carbon-carbonate: 1-96**	Shore Laboratory Shipboard, carbonate 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**	Shore laboratory	Sand-silt-clay content of sample.	No data collected for Leg 16, 64 and 65.
GRAPE (gamma ray attenuation porosity evaluator): 1-96	Shipboard data	Continuous core density measurements.	No data for Leg 46.
Hard-rock major element analyses: 13-82	Shore-based and shipboard analyses	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, 71. Legs 83-94 not yet encoded.
Hard-rock minor element analyses: 13-82	Shore-based and shipboard analyses	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. Legs 83-94 not yet encoded.
Hard-rock paleomagnetics: 14-77	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. Legs 74-96 not yet encoded.
Intersitial Water Chemistry: 1-86	Shore-based and shipboard analyses	Quantitative ion and/or pH, salinity, alkalinity analyses of interstitial water and surface sea water samples.	No data for Legs 46, 83. Legs 87-96 not yet digitized.
***Long-core spinner magnetometer sediment paleomagnetics: 43, 68, 70-72, 75, 90**	Shipboard analyses	Paleomagnetic measurements: declination and intensity of magnetization. Data from hydraulic piston cores only.	Should be used with reservation since the cores were later discovered to be rust-contaminated and disturbed. Quality of the data for each core clarified by documentation.
Discrete sediment sample magnetics: 1-96	Shipboard laboratory	Paleomagnetic measurements: declination, inclination, and intensity of magnetization. NRM measurements and AFD measurements when available.	Rotary cores: 1-76, 78 encoded. 79-96 not yet encoded. HPC cores: 71-75 encoded.
Alternating field demagnetization: 4-96	Shipboard laboratory	Paleomagnetic measurements of sediments on which alternating field demagnetization is carried out.	Rotary cores: 4-73 encoded. HPC cores: 72-79 encoded.
***Sonic velocity: 2-95**	Shipboard analyses	Hamilton frame and 'ear muff' methods.	No data for Legs 1, 13, 96.
***Vane Shear: 31-94**	Shipboard data	Sediment shear strength measurements using Wykeham Farrance 2350 and Torvane instruments.	No data for Legs 32-37, 39-40, 45-46, 49, 52-56, 59-60, 62, 65-67, 70, 77, 79, 81-84, 86, 88-89, 92.

Part 2. Physical properties and quantitative analytic core data. (Cont.)

Analytic water content, porosity, and density: 1-96	Shipboard laboratory	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 tapes: 48, 50, 51, 57, 80-84, 87, 89, 95, 96. Gearhart-Owen tapes: 60, 61, 63-65, 67, 68, 70, 71, 74-76, 78. Analog data only: 6, 8, 46, 66, 69.
***X-ray mineralogy: 1-37**	Shore laboratory	X-ray diffraction	Data for Legs after 37 not available in digital form.

Part 3. Underway geophysics

***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 Western Graphic Model 550. Digital data for Legs 89-96 in SEG-Y tape format.	Both Bolt and Kronllite filters available on board. Fast and slow sweeps available on microfilm 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: 1-85	*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 summaries	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 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 DATAWINDOW.
MUDPAK	A plotting program: handles multiple parameter data (e.g., plots of well logs, plots of physical properties).
DASI	A file of DSDP-affiliated scientists and institutions. Can be cross-referenced and is searchable.
KEYWORD INDEX	A computer searchable bibliography of DSDP related papers and studies in progress.
SAMPLE RECORDS	Inventory of all shipboard samples taken.
DSDP Site Map	DSDP site positions on a world map of ocean topography.

*** - indicates that the database is complete and transferred to NGDC.**

ANNOUNCEMENT:

The Leg 106 shrimp-like hydrothermal crusteans are a new species !

"Rimicaris Exoculata" & "Rimicaris Chayesal"

For information and/or samples, contact Dr. A. Williams, Smithsonian Institution, Natural Sciences, Washington, D.C.

South Pacific and Antarctic Margin Drilling

The report of the USSAC Workshop on Future Scientific Drilling in the South Pacific and Antarctic Margin is now available from P. Ciesielski, Dept. of Geology, University of Florida, Gainesville, Florida 32611.

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 Group.

RS-WG	Red Sea Working Group
KERG-WG	Kerguelen Working Group

JOIDES Office

BIBLIOGRAPHY OF THE OCEAN DRILLING PROGRAM

The following publications are available from the ODP Subcontractors. Information from Texas A&M University can be obtained from ODP Headquarters, TAMU, College Station, Texas 77843-3469. Information from the Lamont-Doherty Geological Observatory can be obtained from R. Anderson or R. Jarrard at the Borehole Research Group, L-DGO, Palisades, N.Y. 10964.

A) TEXAS A&M UNIVERSITY

1. Technical Notes

- #1 Preliminary time estimates for coring operations (December 84)
- #2 Operational and laboratory capabilities of JOIDES RESOLUTION (June 85)
- #3 Shipboard scientist's handbook (September 85)
- #4 Five papers on the Ocean Drilling Program from "OCEANS '85" (May 86)
- #5 Water Chemistry Procedures aboard JOIDES RESOLUTION (September 86)
- #6 Organic Geochemistry aboard JOIDES RESOLUTION - An Assay (September 86)
- #7 Shipboard Organic Geochemistry on JOIDES RESOLUTION (September 86)

2. Scientific Prospectuses

#0	(March 1986)	Leg 100	#7	(October 1985)	Leg 107
#1	(January 1985)	Leg 101	#8	(December 1985)	Leg 108
#2	(February 1985)	Leg 102	#9	(March 1986)	Leg 109
#3	(March 1985)	Leg 103	#10	(April 1986)	Leg 110
#4	(April 1985)	Leg 104	#11	(July 1986)	Leg 111
#5	(June 1985)	Leg 105	#12	(September 1986)	Leg 112
#6	(September 1985)	Leg 106	#13	(September 1986)	Leg 113

3. Preliminary Reports

#0	(May 1986)	Leg 100	#6	(March 1986)	Leg 106
#1	(April 1985)	Leg 101	#7	(May 1986)	Leg 107
#2	(June 1985)	Leg 102	#8	(June 1986)	Leg 108
#3	(July 1985)	Leg 103	#9	(August 1986)	Leg 109
#4	(September 1985)	Leg 104	#10	(September 1986)	Leg 110
#5	(December 1985)	Leg 105			

4. Other Items Available

- Ocean Drilling Program (in English, French, Spanish or German)
- Onboard JOIDES RESOLUTION
- ODP Sample Distribution Policy
- Instructions for Contributors to the <u>Proceedings of the Ocean Drilling Program</u>
- ODP Engineering and Drilling Operations

B) LAMONT-DOHERTY GEOLOGICAL OBSERVATORY

Wireline Logging Manual (1st Edition, March 1985)

DIRECTORY OF JOIDES COMMITTEES, PANELS AND WORKING GROUPS

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

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THE SAGA OF LEG 47, HOLE 397
(Miocene Forever)

Oh Ulrich and Bill Ryan sat together late one nite
    Before them a chart table and flickering candlelite
Oh William said to Ulrich "its thicker than its seems"
    And Ulrich stated "I insist, there is no Miocene".

We've dredged it in the canyons, we've cored it on the rise
    And soon you'll see Cretaceous jet black before your eyes.

Leg 41 was incomplete, they did not know the score
    We'll drill the site again, you see, off the Cape of Bojador.

"You're wrong my friend, I'll stack the crew with Yankees left
    and right
    We'll spud the hole in Miocene and drill for fourteen nites
The cores will come so rapidly, they'll come in grays and greens
    And when we see the bit again, it'll still be Miocene.

The trade winds blow, the sun it sets, the bit goes down and down
    The cores they all are Miocene and Ulrich wears a frown
We still don't know where the hell we are below the Holocene
    If soon we do not core D-1, we all will start to scream.

-by Arthur, Mountain and Wind

(Contributed by F. McCoy)

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Special Issue No. 2: Initial Site Prospectus, Supplement One, April 1978 (Volume III)

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Special Issue No. 4: Guide to the Ocean Drilling Program, September 1985 (Volume XI)

Special Issue No. 4: Guide to the Ocean Drilling Program, Supplement One, June 1986 (Volume XI)

Special Issue No. 5: Guidelines for Pollution Prevention and Safety, March 1986 (Volume XII)