NEWS FROM THE JOINT OCEANOGRAPHIC INSTITUTIONS/U.S. SCIENCE SUPPORT PROGRAM ASSOCIATED WITH THE OCEAN DRILLING PROGRAM

JOI/USSAC NEWSLETTER

JULY 1996 VOLUME 9, NUMBER 2

INSIDE...

Active continental extension: The Woodlark Basin

contributed by Brian Taylor, Carolyn Mutter, Andrew Goodliffe, and Jia Fang

In October 1995, a four-day multi channel seismic and bottom sampling survey was conducted aboard the R/V *Ewing* in the Pacific's western Woodlark Basin. This site augmentation effort, supported by USSSP, was associated with JOIDES Proposal #447. New data from this survey provide further evidence for active extension on a low-angle (~25°) normal fault but do not support a metamorphic core complex origin for Moresby Seamount.

Background

The processes by which continental lithosphere accommodates strain during rifting and initiation of seafloor spreading are presently known primarily from the study of either (1) passive margins bordering rifted continents, where extensional tectonics have long ceased and evidence for active tectonic processes must be reconstructed from a record that is deeply buried in post-rift sediments and thermally equilibrated, or (2) regions of intra-continental extension, such as the U.S. Basin and Range and the Aegean, where extension has occurred recently by comparison to most passive margin examples, but has not proceeded to the point of continental breakup.

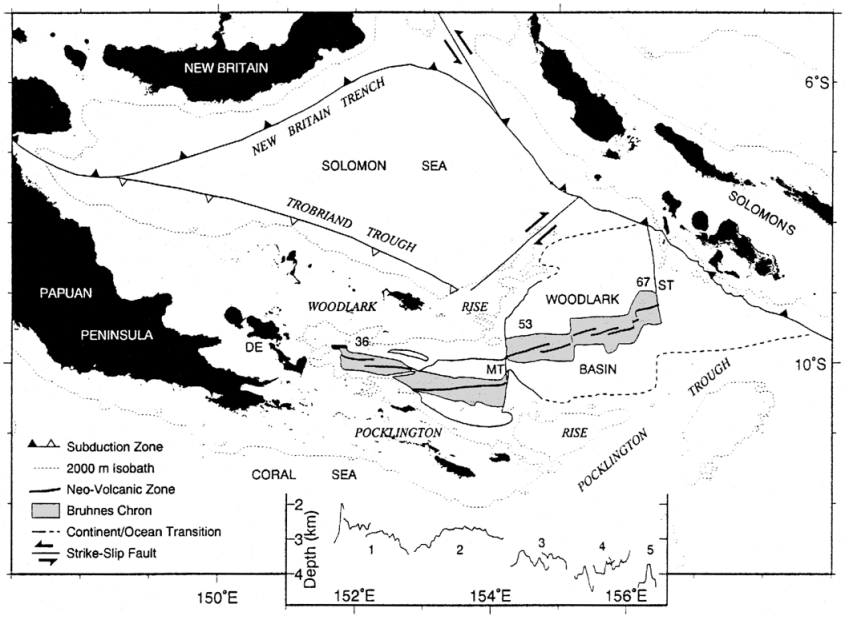

Fig. 1: Tectonic setting of the Woodlark Basin, plus a depth profile along the spreading axis. Spreading rates vary from 36-67 mm/yr.

One particularly controversial conjecture from these studies is that aereally large, normal detachment faults dip at low angles and accommodate very large amounts of strain through simple shear of the entire lithosphere. The role of low-angle normal detachment faults has been contested strongly, both on observational and theoretical grounds. Observationally, it has been suggested that intra-continental detachments have been misinterpreted and actually formed by roll-over of originally high-angle features, or that they occur at the brittle-ductile boundary in a pure shear system. Theoretically, it has been shown that normal faulting on detachment surfaces would require that the fault be extremely weak – almost frictionless – in order to allow horizontal stresses to cause failure on low-angle planes.

The mechanisms by which friction might be effectively reduced on low-angle normal fault surfaces are not understood. One possibility is that active shearing in the fault zone creates a strong permeability contrast with the surrounding crust (by opening cracks more quickly than precipitation can heal them). This would allow pore pressure

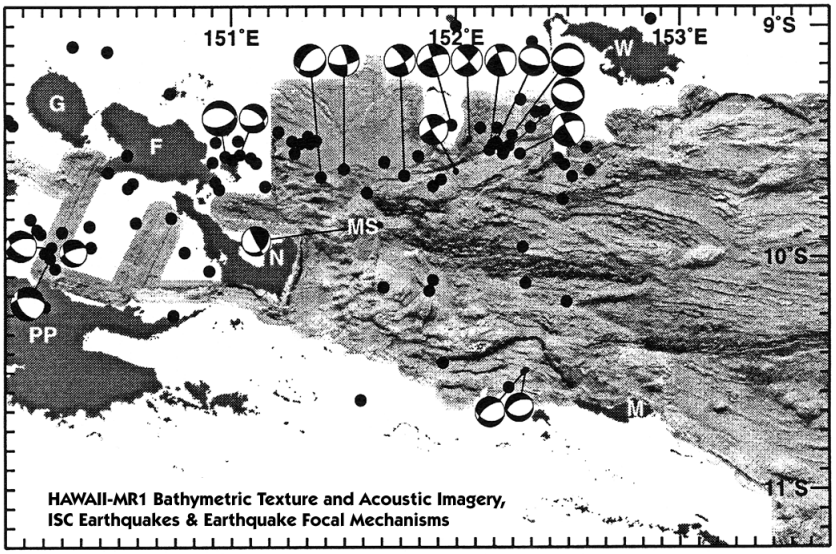

*Fig. 2: Shallow (2-10 km) normal and strike slip faults, with northerly T-axes, bound the north side of the rifting-spreading transition. Margin faulting continues for up to one million years after spreading initiates [*Taylor et al., *1995].*

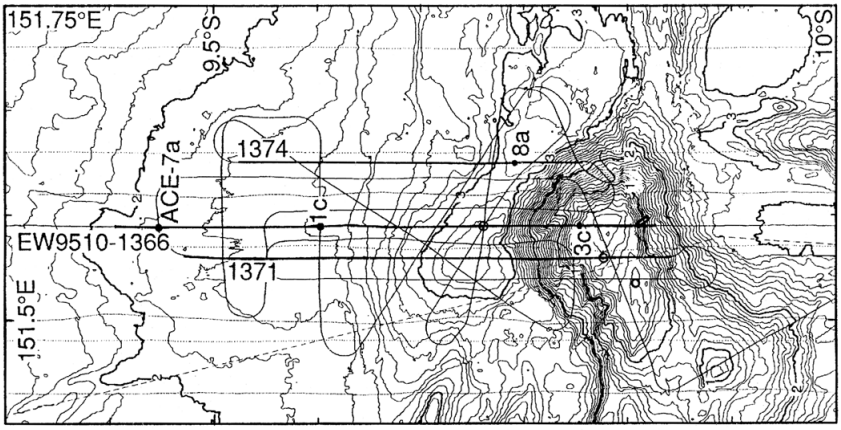

Fig. 3: MCS track chart on 100 m bathymetry base with proposed drill sites (ACE-1c, 3c, 7a, 8a) and new bottom sample locations (cores: open circles, dredge: oblong box). EW9510 track is solid line, with bold seismic segments shown in Figure 4.

distributions that are high and near to the fault-normal compressive stress within the fault zone, but that decrease with distance into the adjacent crust. Testing for such fault-proximal high permeability and pore pressures and the associated local rotation of stress axes requires drilling into an active system. This would also allow determination of the properties of the fault rock at depth as well as studies of the mechanisms by which fluid-rock reactions affect deformation.

The proximal variation from active rifting of continental New Guinea to seafloor spreading in the Woodlark Basin (Figure 1) makes this an attractive area to investigate the mechanics of lithospheric extension. Earthquake source parameters and seismic reflection data indicate that low-angle normal faulting is active in the region of incipient continental separation ([*Abers,* 1991; *Taylor et al.,* 1995; *Mutter et al.,* 1996], Figure 2). Our proposal (JOIDES #447) recommends drilling a transect of sites (just ahead of the spreading tip) above, below, and through a low-angle reflector to test the interpretation that it is a primary low-angle normal fault, to determine the vertical motion and horizontal extension history prior to spreading, and to initially characterize, and subsequently monitor, the *in situ* properties of an active low-angle normal fault.

New Data and Interpretation

In October 1995 on R/V *Ewing,* we conducted a site-specific survey of the rifting region just ahead of the apex of spreading (Figure 3). Here, a continental fault block (Moresby Seamount) forms the footwall to a low-angle reflector that dips north at ~25° beneath a 3.2 km deep rift basin with over 2 km of sediment fill. We deployed a 196 channel, 4.9 km long streamer together with an 8470 cubic inch tuned airgun array to acquire reflection lines that would enable good seismic velocity control and multiple suppression. We also collected bottom samples with three piston cores and one dredge.

Prior to the site survey we hypothesized that Moresby Seamount might be a metamorphic core complex below a regional low-angle normal detachment. The survey results significantly revised our interpretation: Moresby Seamount is more likely an upper crustal block with a pre-rift metamorphic basement, bounded by a regional low-angle normal fault that is the youngest and northernmost of a series of extensional structures.

Figure 4 shows migrated versions of three of the new MCS dip lines (located in Figure 3). The basement geometry and seismic stratigraphy is similar in each case. The northern slope of Moresby Seamount continues in the subsurface as a reflector that, corrected for velocity effects, dips north at ~25° (Figures 4 and 5). Seismic cross lines confirm a generally easterly strike for the reflector, but with a gentle arch plunging NNE from the Seamount. We interpret this reflector as a low-angle normal fault. The reflector is progressively better imaged eastwards, towards the spreading center, possibly as a result of more focused strain and/or fluids. Line 1374 clearly shows the low-angle fault

continuing beneath an antithetic higher angle fault in the hanging wall, but on no line is the fault well imaged below 8 seconds two-way time (~ 10 km below sea level). This is also the depth range of the well-located, low-angle normal fault earthquakes [*Abers,* 1991].

Jump-correlation from the commercially drilled sections in the Trobriand Basin to the northwest suggests that on the northern margin the north-dipping stratified reflectors beneath the rift-onset angular unconformity are from Miocene forearc basin fill above Paleogene basement.

Within the summit region of Moresby Seamount, discontinuous (faulted) reflectors dip NNE above a strong reflection that intersects the seafloor at about 0.8 s two-way travel time on the NE corner of the Seamount. Two previous dredge hauls from the lower northern flank of the Seamount are consistent with the material below this reflection being metamorphic basement. They are similar to greenschist metamorphics on eastern Normanby and Misima Islands, not the core complex amphibolite metamorphics on Goodenough, Fergusson and NW Normanby Islands [*J. Hill, pers. comm.,* 1996].

In contrast, our dredge from 1211-541 m (~ 1.6-0.7 s two-way travel time) on the upper southern flank of the Seamount recovered a dredge bag full of late Pliocene (N21 = 1.9-3.1 Ma) sedimentary rocks of equivalent facies to the Awaitapu Formation of the Trobriand Basin. Benthic forams indicate sediment deposition in water depths of 340-800 m. These rocks are equivalent in age, paleodepth and thickness to those that

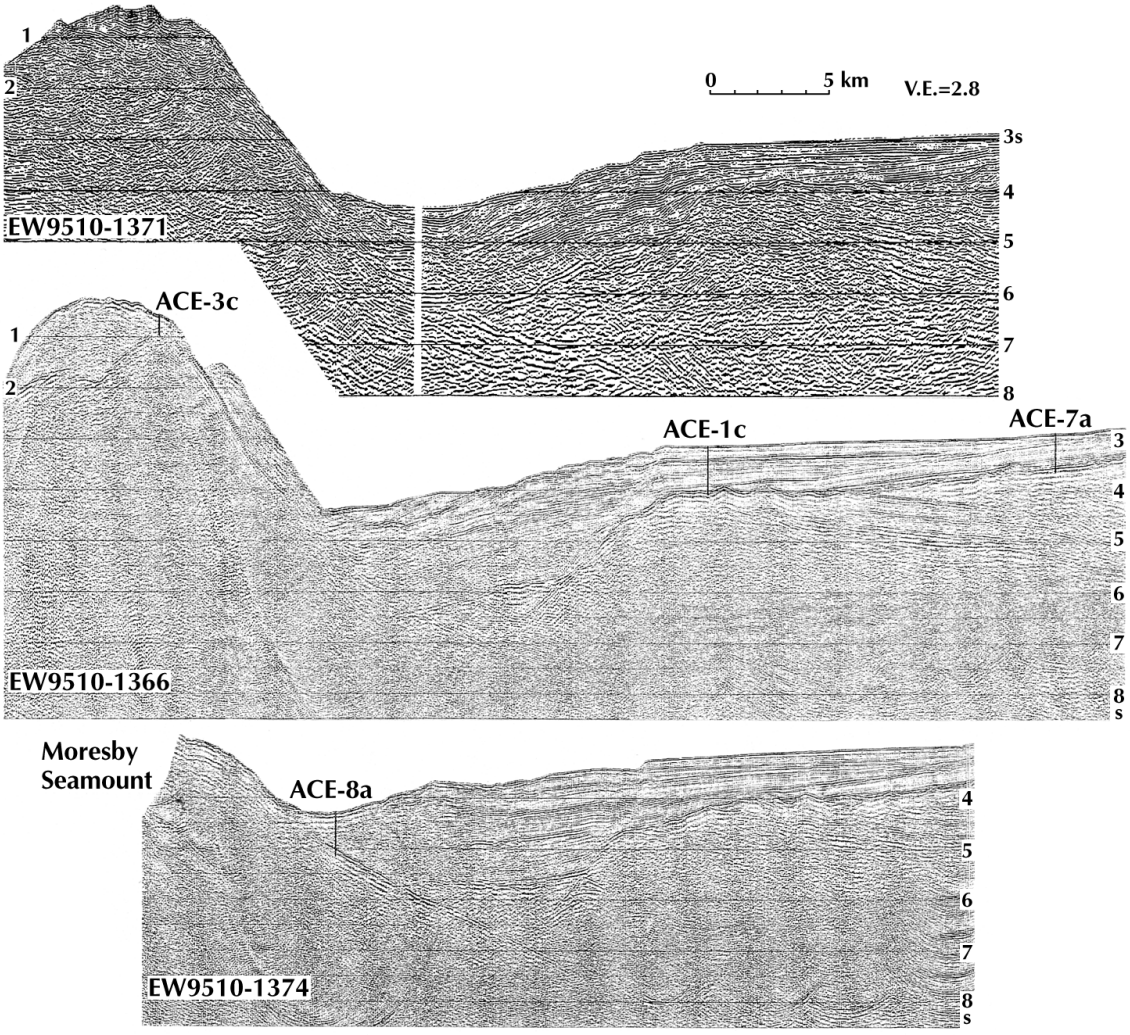

Fig. 4: Migrated seismic profiles, located in Figure 3. The north slope of Moresby Seamount continues as a low-angle reflector (fault) beneath the asymmetric rift graben and the down-flexed northern. The proposed drill sites are ACE-1c, 3c, 7a, and 8a.

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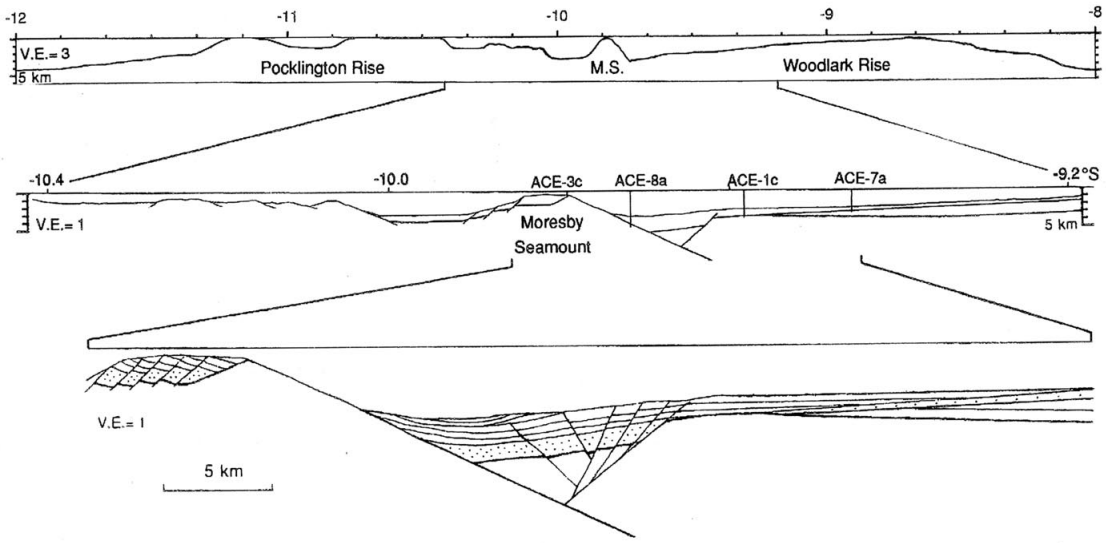


Fig. 5: Nested meridional sections showing the regional and local structures across the incipient conjugate margins. The proposed drill sites are ACE-1c, 3c, 7a, and 8a.

we infer lie near the base of the sediment filling the rift basin to the north.

A cross section consistent with the available seismic and dredge data is drawn in Figure 5. At the end of the Miocene, the Paleogene basement and a forearc basin filled with Miocene sediment were being eroded at or near sea level. Pliocene rifting formed sediment-filled graben in the southern, orogenically thickened, arc province, accompanied by gradual subsidence of the thinner, colder (and therefore stronger) forearc to the north (inferred Pliocene sediments are dotted in Figure 5). Quaternary stretching localized on a low-angle normal fault (the antithetic hanging wall fault accommodated little additional extension); the northern margin flexed down southwards and was offlapped by sediments delivered via submarine channels incising northwards. Recently, continued extension on the low-angle fault variably collapsed the hanging wall graben, into which sediments are now prograding from the north.

This interpretation predicts about 12 km of heave on the inferred low-angle fault. This compares with at least 130 km of total extension prior to spreading at this longitude, calculated from the pole of opening derived from seafloor spreading magnetic anomalies (the adjacent segment is spreading at 36 mm/yr, for example, Figure 1). We infer that the locus of current extension must be the northernmost of a series of similar structures that extended weak crust to the south, forming the asymmetrically block-faulted Pocklington Rise (Figure 5). This rugged province of mainly inactive faults probably accommodated 120 km of total strain as it collapsed from heights comparable to the 3 km high Owen Stanley ranges that form the backbone of the Papuan Peninsula.

A primary insight gained by this site survey is that low-angle normal faulting has not exposed a metamorphic core at Moresby Seamount, but rather a complex sedimentary package with structures comparable to those associated with collapse and infill of the localized basin formed immediately adjacent the fault. While the importance of low-angle normal faulting in the formation of metamorphic core complexes is called into question, the existence of an active low-angle normal fault is not. The seismic data acquired show evidence for very recent motion, and support our assertion that the Woodlark Basin is perhaps the best place in the world to investigate the mechanics of lithospheric extension along an active low-angle normal fault through ocean drilling.

References:

Abers, G.A., Possible seismogenic shallow-dipping normal faults in the Woodlark-D'Entrecasteaux extensional province, Papua New Guinea, *Geology*, 19, 1205-1208, 1991.

Mutter, J.C., C.Z. Mutter, and J. Fang, Analogies to oceanic behavior in the continental breakup of the western Woodlark Basin, *Nature*, 380, 534-537, 1995.

Taylor, B., A. Goodliffe, F. Martinez, and R. Hey, A new view of continental rifting and initial seafloor spreading, *Nature*, 374, 333-336, 1995.

Drill Bits

Lou Garrison

We are deeply saddened to report that Dr. Lou Garrison passed away on July 9 in Texas after an extended illness. Lou had a long relationship with ODP and DSDP, serving as Deputy Director of ODP at Texas A&M University from 1984 until he retired in 1990. During DSDP, Lou was a member of the Pollution Prevention and Safety Panel (PPSP), and the chair for ten years. As Deputy Director at the beginning of the program, Lou was one of the people in charge of building the staff at ODP/TAMU and overseeing the drillship conversion in Pascagoula, Mississippi. Several years later, he commented about the early days of ODP stating, "We were running on pure adrenaline. I have never worked so many long hours in my life or enjoyed it so much." After his retirement, he remained much involved with ODP, continuing to share his valuable knowledge and experience as a PPSP member. As Audrey Meyer stated at the time of Lou's retirement, "I'll miss the lean six-footer with piercing green eyes, a hearty laugh, and a voracious appetite for life." The same holds true now. Rest in peace.

JOI staff changes

We would like to welcome Ms. Pamela Baker-Masson to JOI's Ocean Drilling Program staff. She joined us in late April as the new ODP Public Affairs Director, having previously worked as the Public Affairs Manager at the Smithsonian Institution's Natural History Museum. Feel free to contact Pamela with your ideas and insights into public affairs (pbaker@brook.edu). She is responsible for developing an overall communications strategy for ODP.

We would also like to welcome Ms. Patricia Williams to JOI. She is our new Director of Contracts and Grants. Pat is a retired Army Lieutenant Colonel. Please contact Pat (pwilliams@brook.edu) with questions you may have about JOI contractual matters.

Abstract Deadline: October 1

JOI/USSAC invites you to contribute a summary of your most exciting ODP scientific results to a full-color abstract volume to be published by JOI in the spring of 1997. Editors include Dale Sawyer, Bill Curry, Bernd Simoneit and Jim Ogg. This document will be included with other materials provided by NSF/ODP to the National Science Board in support of ODP renewal in the U.S. for the years 1998-2003, but will also be available free to the entire community upon completion and be placed on the JOI WWW home page.

If you are interested in contributing to this volume, please send your completed abstract(s) to Ellen Kappel (ekappel@brook.edu) no later than October 1, 1996. Abstracts should be approximately 250 words in length, should be accompanied by one illustration or photo (color, if possible), and be written for a general scientific audience. Electronic submission of materials is preferred. Please note that all submitted abstracts may not be included in the volume, and JOI reserves the right to edit abstracts.

JOI REPORT

PCOM and USSAC membership opened up

As reported in Roger Larson's "Letter from the Chair" column in the March newsletter, USSAC recommended that the JOI Board of Governors (JOI BoG or Board) open up JOIDES Planning Committee (PCOM) membership to the entire U.S. community rather than just to the ten JOI institutions. USSAC's January meeting minutes reflect the committee's desire, "that the best U.S. scientists are available to make important planning decisions, and to avoid even the perception that these major decisions are made exclusively by a restricted set of U.S. institutions."

The JOI BoG discussed PCOM membership issues at their July meeting in Oslo, Norway. Their decisions on this topic were forwarded to the USSAC Chair in a July 15th letter from Dr. Arthur Nowell, JOI BoG Chair. We are pleased to provide excerpts from this letter:

- *JOI-BoG Motion: That the Board agrees that U.S. membership of the ODP Planning Committee be open to scientists from any U.S. scientific institution, based on the principal criterion of scientific merit.* [passed unanimously]

The Board also discussed the options for implementing this new policy, and agreed to adopt a modified proposal, based on that recommended by USSAC and presented by Dr. Brent Dalrymple in his discussion paper...

- *JOI-BoG Motion: That the Board agrees that U.S. members on the ODP Planning Committee be appointed by the JOI Board of Governors for a term of no more than four years, from a list of names provided by a Nominating Committee selected by the Chair of the JOI Board of Governors and the Chair of USSAC...* [passed unanimously]

It is understood that these decisions will apply to the new Scientific Committee (SciCom), when it replaces the Planning Committee in due course.

Note that U.S. membership on SciCom is likely to be three years (see page 7).

Dr. Nowell's letter discusses the consequences of Board actions on current PCOM membership. He advises USSAC of the following:

All current PCOM U.S. positions (10 in number) will be elected this winter following the new procedure. An advertisement will be placed in EOS and widely distributed to attract nominations for the vacant positions. In order to ensure a smooth transition to the new structure, it is anticipated that several current U.S. members of PCOM will be carried forward. The terms of these persons will be staggered to ensure that over the next three years we reach a stable situation of rotations so that each year three or four new members replace those whose terms have expired. The only exception to this election procedure is that the incoming chair of PCOM will automatically be appointed to the new U.S. PCOM roster for a minimum of two years. Nominations will be collected by JOI and forwarded to the nominating committee consisting of four members as specified in the JOI Policy Manual. The JOI BoG will officially appoint new members at its winter meeting in Washington, D.C. in February 1997. Alternates, who will be linked thematically to the relevant member, will also be appointed following the same procedure and all appointments will be independent of institution and dependent on scientific contribution and expertise. It is intended that all alternates will receive copies of the minutes and agendas of meetings so that they are fully familiar with all issues. In addition, each PCOM or SciCom member will have an identified point-of-contact on the EXCOM to ensure adequate communication between PCOM and EXCOM.

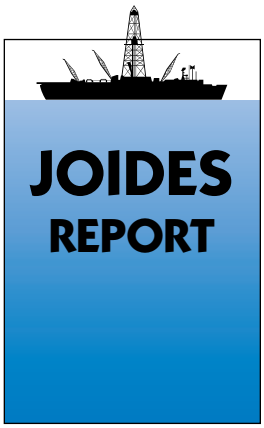
During the Oslo Board meeting, USSAC membership issues were also discussed. While USSAC membership has always included scientists from both JOI and non-JOI institutions, the Committee's Terms of Reference stipulated "that over a period of three years all JOI institutions will have been represented on the Committee." Dr. Nowell's letter to USSAC addresses this issue:

- *JOI-BoG Motion: That membership on the U.S. Science Advisory Committee will follow the same criteria of scientific excellence and thematic balance as will henceforth apply to the U.S. membership on PCOM/SciCom.* [passed unanimously]

As a consequence, JOI will be advertising for applications for USSAC membership, and a nominating committee will forward a slate of names to JOI BoG. The nominating committee

will be appointed by the JOI BoG Chair, two members of which will be based on suggestions from the USSAC Chair and U.S. members of PCOM/SciCom and two members nominated by the JOI BoG. We hope that we can overlap or combine these two nominating committees to make for an efficient operation.

Dr. Nowell concludes his letter by stating: *I should like to thank you, as Chair of USSAC, and all the members of USSAC for helping to precipitate these major steps to include the total U.S. community in the scientific planning process of ocean drilling. We hope that the steps taken to ensure broadly based representation on all science advisory committees will help ensure a stronger scientific base as we look toward the crucial post-2003 phase of ocean drilling.*



A brief look at a reorganized JOIDES

There has been much discussion within JOIDES about how to modify the panel structure to best implement the goals of the 1996 ODP Long Range Plan (LRP). In July, a subcommittee of EXCOM and PCOM members met in Washington, D.C. to refine the details of the PCOM-proposed changes that EXCOM reviewed earlier in the month. The subcommittee's ***proposal, not yet approved*** by EXCOM, is as follows:

A **Scientific Committee** (SciCom) would replace PCOM as the top science committee reporting to EXCOM. Its mandate would be to provide long-term science and technology planning for ODP and to be the "custodian" of the LRP. Members would serve for three years and would be appointed by JOIDES member institutions (JOI Board of Governors in the U.S.). SciCom would produce an integrated global ranking of proposals.

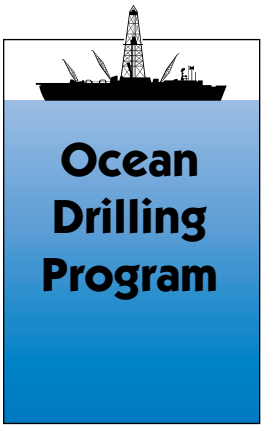
SciCom would form a subcommittee called the **Operations Committee** (OpCom) which would be responsible for short-term planning (annual scheduling) and technology advice. The SciCom chair would chair OpCom as well. Membership would include three people from SciCom and three non-SciCom members appointed by SciCom based upon expertise required. Decisions would be made by consensus.

Two **Science Steering and Evaluation Panels** (SSEP) would replace the current thematic panels. Membership would reflect the broad scientific balance needed for proposal grading (not ranking). Appointment would be by JOIDES member institutions with SciCom advice. The mandates of these panels would include evaluation and comment on proposal development to SciCom and proponents, and would recommend mature proposals for external mail review.

Several new **Program Planning Groups** (PPG) would be formed by SciCom. The total number of PPGs would be determined by the need to fulfill Long Range Plan objectives. No PPG would exist for longer than three years. The mandates of the PPGs would be to develop drilling strategies for major scientific objectives that SciCom determines are not sufficiently covered by available drilling proposals. These groups would foster communication between ODP and international geoscience initiatives, as well as individual proponents or proponent groups. These groups would report their results to the SSEPs.

There would be no change to the Pollution Prevention and Safety Panel, the Site Survey Panel, or the Technical Development Committee. The Information Handling, Downhole Measurements and Shipboard Measurements Panels, as currently constituted, would be disbanded, but a new **Scientific Measurements Panel** (SciMP) would be established. The mandate of the new SciMP would be to monitor and recommend development or acquisition of scientific measurements techniques and equipment, and advise OpCom on the scientific and operational feasibility of proposal requirements.

The details of this plan are still being refined by the current PCOM Chair, Julian Pearce. Some outstanding issues will be brought to PCOM in August for further discussion. We expect EXCOM to vote on the proposed changes late in 1996 or early 1997.



ODP revises its publication policy

As reported in the March newsletter, the JOIDES Planning Committee made several recommendations to JOI to make changes in the ODP Publications policy, primarily to encourage shipboard participants to publish in the "outside" literature sooner. Over the last several months, these recommendations have been considered and refined by ODP/TAMU, in consultation with JOI and JOIDES. JOI recently approved a revised ODP publications policy, which is reprinted below. Questions regarding this policy should be directed to Ann Klaus, Manager of Publications, ODP/TAMU (ann_klaus@odp.tamu.edu).

JOI, ODP/TAMU, and JOIDES have also spent considerable time developing a future vision for ODP publications. This vision involves full, downloadable, digital availability of all ODP information and data on CD ROM and on the Internet, at least in test mode, by the beginning of 2001. In future newsletters we will report on how changes to ODP data and publication delivery would affect the user community.

I. ODP Publications, Legs 160 and beyond

A. Initial leg results

1. The Initial Reports (IR) volume is prepared by the shipboard scientific party during the leg. A representative group of 8 to 12 individuals meets 3 to 5 months post-cruise to complete the final editing of all IR material. The IR volume is scheduled to be published one year after the end of the cruise.

B. Post-cruise science results

All shipboard and shore-based participants who receive ODP samples or data in the first 12 months post-cruise are required to publish a peer-reviewed manuscript related to leg objectives, or to a related discipline, in: an internationally recognized, peer-reviewed scientific journal that publishes in English, or the Scientific Results (SR) volume for the leg. An Editorial Review Board (ERB) will be established for every leg. The primary purpose of the ERB is to maintain an independent and effective peer-review system. Each Board is composed of four persons: the two co-chiefs, the ODP staff scientist, and an external scientist-specialist.

1. General conditions for publishing post-cruise science results

   a) A final table of contents that links sample or data requests to specific titles/papers must be approved by the Editorial Review Board (ERB) at the science post-cruise meeting. Every paper intended to fulfill the scientific party's obligations must be identified at this time.
   b) Additional papers not listed in the table of contents may be submitted to the outside literature before the volume closes, provided that copies are supplied to the ERB for review (as outlined under Section 2.a) at the time of journal submission.
   c) Authors must acknowledge the receipt of data or samples from ODP and acknowledge the funding agency that supported their research.

2. Conditions for publishing in the outside literature

   a) The Editorial Review Board (ERB) is responsible for reviewing each manuscript for proper citation of site summaries and site chapters and for proper use of data and conclusions from other members of the scientific party. Authors must submit a copy of their manuscript to the ERB at the time of their initial journal submission. If the ERB deems that there is improper usage of the data and conclusions of other

members of the Scientific Party, or failure to properly cite the Initial Reports volume, the ERB will contact the author and the journal editor with a recommendation that the manuscript be withdrawn or suitably modified.

b) An author has satisfied his obligation to ODP to publish post-cruise research results after the author has sent the ERB verification from the publisher that the paper was submitted and has been accepted for review. In addition, to meet obligation requirements, authors must submit their papers to outside journals by the time the SR volume closes. (Note: the volume closes at the specialty revision deadline.)

c) Authors are required to submit an electronic copy of the final citation, the abstract, and a reprint to ODP. ODP will maintain an electronic leg-related publication list on the World Wide Web.

d) Authors who wish to submit papers to the outside literature before the one-year post-cruise data moratorium has expired must receive prior approval in writing by a majority of the scientific party. This approval must be coordinated among the authors and the co-chiefs. Papers submitted before one-year post-cruise must be pre-approved by the ERB.

3. Conditions for publishing in the Scientific Results volume

a) Any author who chooses to submit a paper to the Scientific Results volume will be required to meet the submission deadlines established by ODP.

b) Upon submission, the staff scientist on the ERB must review all manuscripts to ensure they are complete and of reviewable quality. Papers that do not meet ODP's standards will be returned to the author and will not go through the review process unless they are revised to meet ODP standards before the submission deadline.

c) An author has satisfied his obligation to ODP to publish post-cruise research results after he has submitted a data report, scientific paper, or synthesis paper deemed to be of reviewable quality by the ERB and that corresponds to the agreed topic as laid out in the table of contents.

d) The ERB is responsible for: (i) Ensuring that all manuscripts are of reviewable quality before they are sent out for review. (ii) Coordinating the review process for each manuscript. (iii) Reviewing each paper for proper citation of site summaries and site chapters and for proper use of data and conclusions from other members of the scientific party. (iv) Collecting manuscript reviews and making the final decision on manuscript acceptance or rejection of articles submitted for the SR volume.

II. Obligation to Publish

All scientists who receive samples or data from ODP within one year of a cruise are required to meet the publication obligations defined above. Any scientist who does not meet these obligations will be considered a nonperformer.

Notice of nonperformance will be forwarded by ODP to the author's member country office for action. This notice will also remain on file at ODP/TAMU and will be attached to any application for participation in a future drilling leg made by that scientist.

POST-CRUISE SCIENTIFIC PARTY SUBMISSION DEADLINES FOR SR

Leg 160: 36 months

Leg 161: 42 months

Leg 162: 44 months

Leg 163: 46 months

Leg 164 and beyond: 48 months

ANNOUN

ANNOUNCING A CONFERENCE ON

MAGNETIZATION OF OCEANIC CRUST

DATES: *October 21-24, 1996*
LOCATION: *Orcas Island, San Juan Islands, Washington*
REGISTRATION DEADLINE: *1 August 1996*
CONVENERS:
Paul Johnson, UW, johnson@ocean.washington.edu, tele: 206-543-8474
Dennis Kent, LDEO, dvk@lamont.ldeo.columbia.edu, tele: 914-365-8544

Marine magnetic anomalies have played a pivotal role in the theory of plate tectonics, and studies of the magnetization of oceanic crust continue to influence our view of the formation and evolution of the oceanic basins. In order to evaluate new models, and to devise a common strategy for advancing our understanding of the magnetization of the seafloor, a conference on the Magnetization of Oceanic Crust will be held during October 1996. Partial support for conference participants will be available through USSSP and RIDGE funds (with priority based on arrival-date of registration material), with additional funding being requested from NSF. Information regarding the conference and registration process is available from either of the conveners.

fellowship OPPORTUNITIES

JOI/USSAC is seeking doctoral candidates of unusual promise and ability who are enrolled in U.S. institutions to conduct research compatible with that of the Ocean Drilling Program. Both one- and two-year fellowships are available. The award is $20,000 per year to be used for stipend, tuition, benefits, research costs, and incidental travel, if any. Applicants are encouraged to propose innovative and imaginative projects. Research may be directed toward the objectives of a specific leg or to broader themes.

PROPOSAL DEADLINES FOR	
Shore based Work (regardless of leg)	*11/15/96 & 4/15/97*
Shipboard Work (Legs 176-181)	*4/15/97*

For more information and/or to receive an application packet please contact Andrea Johnson at:
JOI/USSAC Ocean Drilling Fellowship Program
Joint Oceanographic Institutions
1755 Massachusetts Ave., NW, Suite 800
Washington, DC 20036-2102; Tel: (202) 232-3900 x213;
Fax: (202) 232-8203; Internet: ajohnson@brook.edu

For up-to-date information on ODP and USSSP activities visit the

JOI HOME PAGE

http://www.joi-odp.org

ODP FROM MOUNTAINS TO MONSOONS

The interactive, educational CD-ROM, *ODP: From Mountains to Monsoons,* is now available in both Mac and PC formats. An accompanying teachers manual is also available upon request. For a free copy please contact: JOI/USSSP, Joint Oceanographic Institutions, 1755 Massachusetts Ave., NW, Ste. 800, Washington, DC 20036-2102; tele: (202) 232-3900, fax: (202) 232-8203, e-mail: joi@brook.edu

U.S. PARTICIPATION ON ODP LEG 173

JOI/USSSP would like to encourage U.S. scientists to apply to participate as shipboard scientists on ODP Leg 173. Leg 173 will drill into the Iberian Basin to better understand the history of this non-volcanic rifted margin, including the timing and nature of melt generation during breakup and the earliest generation of "normal" oceanic crust. For more information or to apply please contact Dr. Jack Baldauf, Manager of Science Operations, ODP/TAMU; tele: (409) 845-9297; fax: (409) 845-0876; e-mail: jack_baldauf@odp.tamu.edu.

CEMENTS

JOI/USSSP SUPPORTED SHIPBOARD PARTICIPANTS

LEG 168: JUAN DE FUCA HYDRO CIRC
U.S. Co-Chief: Andrew Fisher, UCSC
ODP Staff Scientist: John Firth
Lamont Logging Scientist: Yue-Feng Sun
Keir Becker, U. of Miami
Kimberly Brown, Scripps
Roisin Lawrence, Duke U.
Jeffrey Martin, Georgia Inst. of Tech.
Michael Mottl, U. of Hawaii at Manoa
Daniel Pribnow, U. of Utah
Joshua Stein, UC Santa Cruz
Michael Underwood, U. of MO, Columbia
David Vanko, Georgia State U.
Charles Wheat, W. Coast National Undersea Res. Ctr.

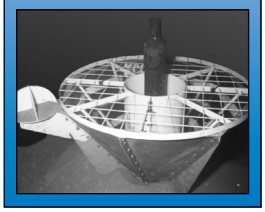
LEG 169S: SAANICH INLET
ODP Staff Scientist: John Firth
Jennifer Morford, U. of Washington
Ann Russell, UC Davis

LEG 169: SEDIMENTED RIDGES II
U.S. Co-Chief: Robert Zierenberg, UC Davis
ODP Staff Scientist: Jay Miller
Lamont Logging Scientist: Gilles Guerin
Lamont Logging Scientist: Gerardi Iturrino
Jean Bahr, U. of Wisconsin, Madison
Paul Baker, Duke U.
Charlotte Brunner, U. of Southern MS
Joris Gieskes, Scripps
L. Lynn Marquez, Northwestern U.
Catherine Rigsby, East Carolina U.
Wayne Shanks, USGS
Bernd Simoneit, Oregon State U.
Melanie Summit, U. of Washington
Damon Teagle, U. of Michigan

JOIDES Resolution Schedule for Legs 168-176

Leg	Region	Co-Chiefs	Dep. Port	Date	Scientific Objectives
168	Juan de Fuca Hydro. Circ.	Davis Fisher	San Fran	6/96	To investigate the nature and consequences of hydrothermal circulation in oceanic crust: specifically, lateral gradients in fluid composition, formation pressures/ temperatures, formation-scale permeability, and circulation vigor.
169S	Saanich Inlet	Bornhold	Victoria	8/96	To study the Quaternary climate history of the Pacific Northwest region of N. America.
169	Sedimented Ridges II	Fouquet Zierenberg	Victoria	8/96	To study the interrelationships of tectonic, igneous, and sedimentary processes in controlling fluid flow, energy and mass flux, and formation of sulfide deposits at sediment-dominated rift environments.
170	Costa Rica Accret. Wedge	Kimura Silver	San Diego	10/96	To study the mass- and fluid-flow patterns through the accretionary prism to establish the mechanical and chemical behavior of accretion and under-plating, tectonic erosion, and deformation and dewatering distribution.
171A	Transit to Barbados		Panama	12/96	----------
171B	Barbados LWD	J.C. Moore	Barbados	12/96	To understand the interrelationship of deformation, fluid flow, seismic imaging, and physical properties.
171C	Blake Plateau/ Nose	Norris Kroon	Barbados	1/97	To reconstruct the watermass chemistry and circulation of ocean waters during the Cretaceous and early Cenozoic to examine the sediment record following the bolide K/T impact, the hydrographic structure of the low-latitude Cretaceous ocean, and the evolution and biostratigraphy of Cretaceous microfossils.
172	NW Atlantic Sedi. Drifts	Keigwin Rio	Charleston	2/97	To analyze geochemical proxies for nutrient content, temperature, and salinity in order to reconstruct a high-resolution, deep- to intermediate-depth hydrographic reconstruction for the western subtropical North Atlantic during the last glacial maximum.
173	Iberia Margin	Beslier Whitmarsh	Lisbon	4/97	To better understand the history of this non-volcanic rifted margin, including the timing and nature of melt generation during breakup and the earliest generation of "normal" oceanic crust.
174A	New Jersey Shelf	Austin Christie-Blick	Halifax	6/97	To investigate the Oligocene-Holocene history of sea-level change by determining the geometry and age of the Oligocene-to-Miocene depositional sequences.
174B	CORK 395A/ Engineering	Becker Pettigrew	New York	7/97	To CORK Hole 395A and to conduct engineering tests.
175	Benguela Current	Berger Wefer	Las Palmas	8/97	To reconstruct the history of the Benguela current and coastal upwelling of the region between 5 and 32°S.
176	Return to 735B	Dick Natland	Cape Town	10/97	To deepen hole 735B and investigate the nature of magmatic, hydrothermal, and tectonic processes in the lower ocean crust at a slow-spreading ocean ridge.

BOREHOLE REPORT



OSN Pilot Experiment becomes a reality

contributed by John A. Orcutt

In December 1994, JOI/USSAC sponsored a workshop to consider the growing need for an integrated effort to instrument and sample ocean boreholes for periods of years to decades. The meeting participants recommended formation of BOREHOLE (BOREHole Observatories, Laboratories, and Experiments), an organization to facilitate post-drilling, sub-seafloor science.

Establishing long-term, seafloor observatories has become an important priority for two reasons. First, it has been recognized that an evenly spaced global distribution of geophysical stations is essential for studies of Earth's deep interior. Second, new technologies that would enable such stations have recently become available. Several global programs (e.g., ODP, InterRidge, and ION) have begun to develop seafloor observatories for not only global seismic, geodetic, and magnetic studies, but also for important regional problems including earthquake hazards, geohydrology, geochemistry, and tectonics.

The broadband seismic observatory discussed in this article is clearly devised to address scientific issues which require global sampling for tomographic studies of the structure of the core and mantle. At the same time, however, seafloor seismic observatories will permit the determination of ocean lithosphere and upper mantle structure using travel paths which are purely oceanic. Presently, such studies use island and continental stations with the consequent contamination of the data by propagation through the transitions between ocean and land. In many cases, the absence of island stations over portions of the globe prevents detailed studies of earthquake sources from a full range of azimuths. Only in rare cases is it possible to study sources in trenches from stations located on downgoing oceanic plates. The scientific rationale for ocean seismic stations is well-established (see page 14 box). The recent availability of enabling technologies make such studies practical for the first time.

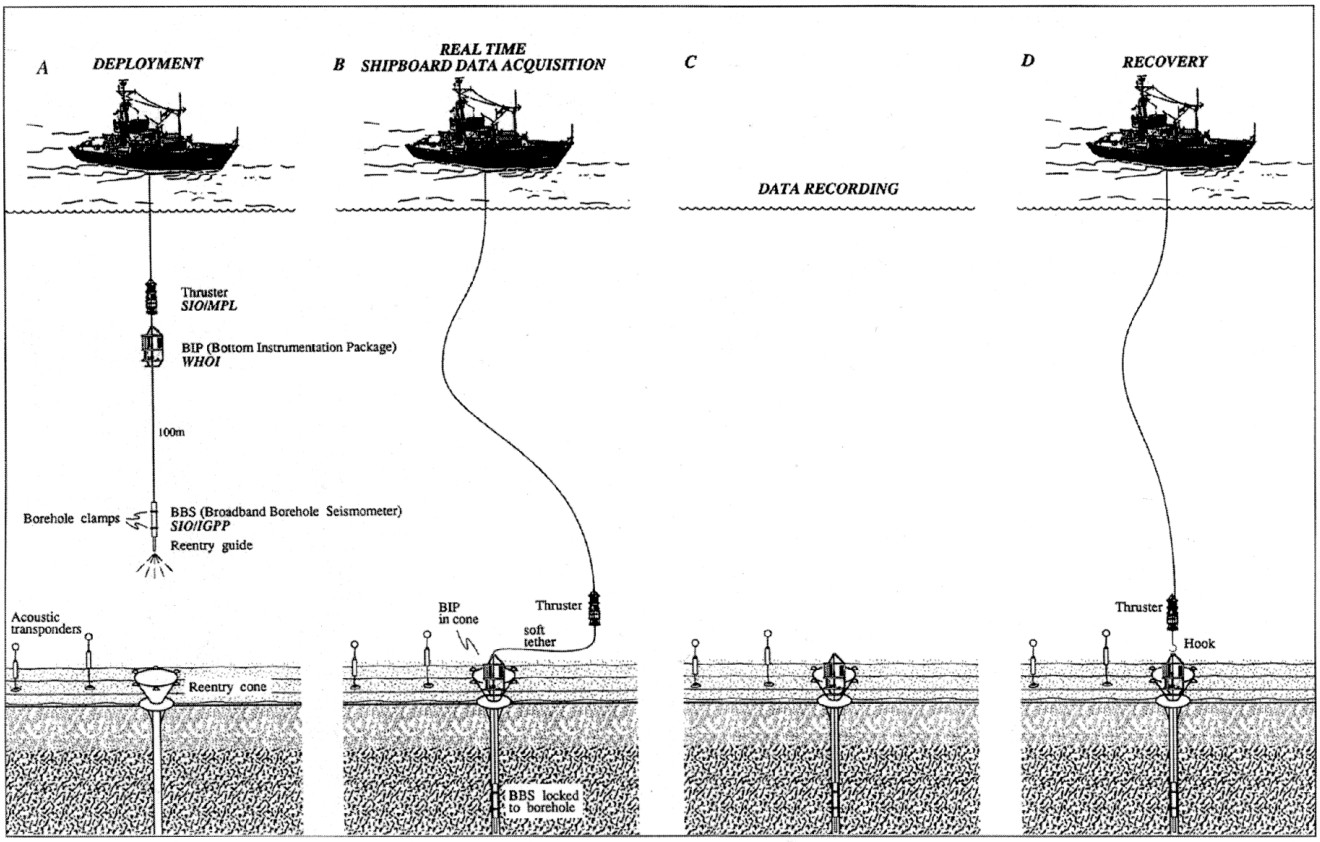


Fig. 1: A sequence of four frames depicting the deployment and recovery of the B^3S^2. (A) Reentry will be made at OSN-1 in nearly 4500 m of water using the MPL/SIO thruster. The close navigation will be done with a television camera mounted at the bottom of the BBS. (B) Following reentry, the soft tether connecting the thruster and WHOI BIP will isolate wire and thruster vibrations from the seismometer. (C) When leveling is complete and data have been recorded on the ship for a period, the tether will be broken and the system will record for three months in situ. (D) When the independent recording period is complete, the thrust will recover the WHOI BIP and the SIO seismometer after masses have been locked.

The long-awaited Ocean Seismic Network (OSN) Pilot Experiment is about to become a reality this coming March. The R/V *Roger Revelle* will leave La Jolla on 10 February and will emplace a broadband borehole seismometer in a cased borehole (OSN-1, a.k.a. ODP Hole 834B) 225 km south — southwest of Oahu for a three-month period. The instruments to be tested at the site are the joint responsibility of several investigators at a number of oceanographic institutions including Ralph Stephen and John Collins at Woods Hole, Tokuo Yamamoto at the University of Miami, and Frank Vernon, Fred Spiess, John Hildebrand and myself at Scripps. While the object of the experiment is largely seismological, several technologies and facilities of broad interest have been developed by the project.

In 1991, a meeting to outline the details of a Pilot Experiment was held at JOI in Washington, D.C. While several experiments have been conducted to test broadband seismometers in boreholes, the deployments and/or recording intervals have been brief. Furthermore, none of the deployments have addressed a key question of whether deployment in a borehole is essential for recording high-fidelity data on the deep seafloor. The Pilot Experiment Task Force called for a three-month-long deployment of an observatory-grade seismometer in a borehole while, at the same time, comparing the data with broadband instruments deployed at, and directly beneath the seafloor.

The borehole system which has been developed over the past several years has been dubbed B^3S^2 (BroadBand Borehole Seismic System) and the seafloor and buried broadband system is now called BBOBS (BroadBand Ocean Bottom Seismograph). All of the equipment will be deployed from the Scripps/MPL Control Vehicle which is now widely used for emplacing and tending many seafloor observatory experiments. Figure 1 illustrates the deployment of the B^3S^2 and Figure 2 that of the BBOBS. In addition to these instruments, two 1 Hz ocean bottom seismographs and a current meter will be deployed at the site. Comparisons will be made with an IRIS site on Oahu (KIP) and the Carnegie Institute of Washington (Sean Solomon and Cecily Wolfe) hopes to deploy broadband portable systems on the other islands. Finally, an eight-element array of broadband hydrophones and EM instruments will be deployed in the vicinity for an eight-month period as a pilot experiment for determining the structure of the Hawaiian swell using surface waves (Phipps Morgan, Gabi Laske, and myself) and mantle conductivity (Steve Constable). The breadth of the data collected should allow the various investigators to address important problems associated with Hawaiian upper mantle, plume, and lithosphere structure in addition to the technical issues associated with the Pilot Experiment.

During the six-year period between the definition of the Pilot Experiment and the experiment itself, proposals were funded to develop and construct the required instrumentation. Frequently, broadband borehole seismometers are deployed on land to avoid low-frequency noise generated on the

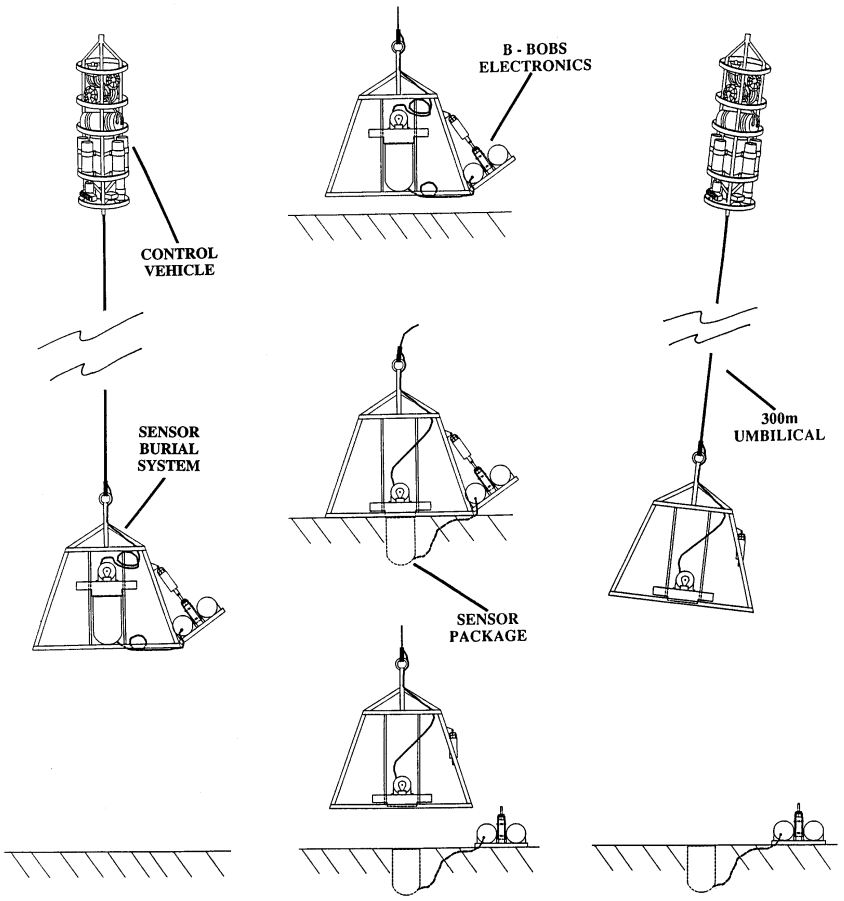


Fig. 2: A depiction of the SIO/MPL Control Vehicle deploying the sensor burial system (SBS) which injects the BBOBS sensor into the seafloor.

John A. Orcutt is Director of the Institute of Geophysics & Planetary Physics at Scripps Institution of Oceanography.

surface by wind turbulence and the associated forced tilts on the surface. In addition, the horizontal components appear to record horizontal motion with greater fidelity than is the case for instruments sited on shallow piers. The deployment on the seafloor should gain the same noise and coupling advantages at low frequencies (10 - 100 mHz), but the situation is complicated by the presence of water in the hole itself. In order to test the B^3S^2 system properly on land, a 100 m deep borehole sized to match cased ODP holes was drilled at the Cecil and Ida Green Piñon Flat Observatory operated by Scripps' IGPP in the high desert near Palm Springs. The hole was not sealed at the bottom which allowed ground water to fill the hole to the level of the water table. The broadband seismometer, identical to those used by the IRIS/IDA project on land — the Teledyne KS54000, and its pressure case and clamps have been in and out of this test hole now more than 20 times. Redesigns of the clamping and cabling systems have greatly improved upon the initial noise levels. Efforts continue to make the horizontal components as quiet as those observed by an identical instrument in a dry borehole no more than 10 m from the ocean borehole. This ODP surrogate hole may be of use to other scientists interested in developing and testing instruments for seafloor borehole observatories.

The BBOBS system is nearly complete. The electronics and 24-bit A/D system is in most respects identical to those developed for the B^3S^2. They are based on the electronics and the A/D system used for IRIS PASSCAL portable system. Mark Zumberge tested the significantly modified Datasonics acoustic modem in 800 m of water this past spring as part of his seafloor laser strain meter project and will operate the system in 2500 m of water this fall on the Juan de Fuca Ridge. The acoustics modem will be used at 4407 m at OSN-1 to return data from the two BBOBS instruments installed; one sensor resting on the seafloor and the second sensor buried a meter in the sediments.

Later in the summer, the burial system developed at the University of Miami will be tested to ensure that it is capable of burying the Guralp CMG3T package which is part of the two BBOBS systems. Earlier tests with sediments of the appropriate porosity and composition have been successful, but this test will integrate the full system.

A critical component of all of these seismic systems is the Control Vehicle (CV). The CV is equipped with a pair of electric-hydraulic horizontal thrusters mounted at right angles so that a force can be generated in any direction to move or maintain the payload in position for extended periods. The CV has been tested this year extensively, particularly for observatory programs at the Juan de Fuca Ridge and will be tested aboard the R/V *Roger Revelle* with the other equipment prior to sailing from San Diego for the Pilot Experiment. Upon arrival at the site, Fred Spiess will place a packer at the bottom of the casing to seal the hole against potential hydrothermal circulation which is a potential source of noise for the seismometer. During the final leg of the Pilot Experiment (recovery leg), Joris Gieskes will use the thruster to sample borehole fluids below the casing and Hildebrand and Spiess will run temperature, pressure and acoustic caliper (televiewer) logs through the full extent of the hole.

Earlier technological problems including accurate timing, data storage, battery power supplies, high dynamic range recording, and wireline reentry have been solved by this and related programs. The Pilot Experiment will fully test new technologies including broadband seismometer remote clamping, wireline packer emplacement, and remote sensor burial and leveling in a deep ocean environment. Great progress has been made in the development of remote, long duration, high data rate seafloor observatories.

IN DEPTH

RELATED DOCUMENTS AVAILABLE FROM JOI

Broadband seismology in the oceans: Towards a five year plan

BOREHOLE: A plan to advance post-drilling, sub-seafloor science
Bobb Carson, et. al., conveners

***Seismic Waves,* the Ocean Seismic Network newsletter**

ODP Long Range Plan

Pilot experiment task force meeting report
D. Forsyth, S. Sacks, and A. Trehu, leaders

Broadband downhole seismometers workshop report
G.M. Purdy and A.M. Dziewonski, conveners

Science opportunities created by wireline reentry of deep-sea boreholes
M.G. Langseth and F.N. Spiess, conveners

In memory of Robert Benjamin Kidd

1947 to 1996

We are saddened to report that on June 9th, Dr. Rob Kidd, a veteran ODP'er and recently the Chair of the Planning Committee, died from heart disease in Cardiff, Wales, at the age of 48. He had been ill for some time and he passed away in the hospital. Kidd had a relapse while receiving the Major Edward Coke Medal of the Geological Society, at Burlington House on 4th June. This medal, an accolade from peers in the British earth sciences, was accompanied by a citation recognizing his excellent research in paleoceanography and marine geology.

Dr. Kidd, the Professor of Marine Geology in the University of Wales, Cardiff, progressed from undergraduate, graduate, Staff Scientist, faculty member, Chief Scientist, Head of Science Operations, Professor of Marine Geology, and PCOM Chair. But, regardless of what he was doing at the moment, Kidd was always a scientist.

Kidd obtained his first degree at Kingston Polytechnic before moving to the University of Southampton to study Tyrrhenian Sea sediments. For his PhD, Kidd joined the Institute of Oceanographic Sciences in 1973 and almost immediately departed for the Deep Sea Drilling Project at Scripps Institution of Oceanography as a Staff Scientist. Returning to IOS, he combined sediment core data with imagery from the GLORIA side-scan sonar technology then being developed in the Institute. Later he applied the sonar instrumentation to studies of the deep ocean floor as a potential repository for radioactive waste. In 1983, Kidd returned to the U.S. as Head of Science Operations for the Ocean Drilling Program, and a faculty member at Texas A&M University. The position demanded a combination of broad scientific knowledge and imagination as well as keen organizational skills. Kidd sailed on five such cruises, three as chief scientist. Kidd's success opened the way for him to return to the University College of Wales in Swansea, in 1987, as Professor of Geology. This appointment was a source of pride and joy because he had been raised in west Wales and he was proud of his heritage. Kidd oversaw the merger of the Geology and Oceanography Departments in Swansea before moving to Cardiff as a result of the merger of Departments in a national restructuring of academic earth sciences. There, he built a marine geology research group that continues to thrive.

Kidd was one of the strongest proponents of marine geological research in the United Kingdom. He recognized early the importance of integrated international efforts, such as ocean drilling programs, in making fundamental contributions to our understanding of earth sciences. To that end, Kidd worked selflessly and tirelessly to promote such efforts. When an opportunity arose for a non-US country to lead the scientific planning of the ODP, Kidd was, by general acclaim in the UK, the scientist to turn to for the crucial role of PCOM Chair. He had the respect of the community, a clear vision of where the program should go, and an understanding of what was practical and politically feasible. Through his energy and determination, the global geoscience community has developed a new vision for ocean drilling that extends into the next century.

Kidd valued his work and was immensely proud to be PCOM Chair, but above all, he treasured his family. Those of you who have had the privilege of meeting his wife Rosalie and their four sons already know that Kidd's family was his greatest love. A celebration of Kidd's life was held on June 14th at his house, hosted by his family. In keeping with his wishes, it was a nonreligious affair. Kidd asked for the following passage by Bishop Brent to be read:

What is dying? A ship sails and I stand watching till she fades on the horizon and someone at my side says, "She is gone." Gone where? Gone from my sight, that is all; she is just as large as when I saw her. The diminished size, and total loss of sight is in me, not in her, and just at the moment when someone at my side says "She is gone," there are others who are watching her coming, and other voices take up a glad shout, "There she comes!" and that is dying.

We will remember Rob Kidd with affection and deep respect.

NSF REPORT

Ch- ch- ch- ch- changes...

Contributed by J. Paul Dauphin, Associate Program Director, NSF/ODP

Much has happened since the last newsletter was published. For one thing, NSF finally received a budget and the government is back at work. As we approach the end of fiscal year 1996, we are waiting and watching to see what Congress will do with NSF's budget request for FY 97. In the mean time, NSF has been busy preparing its FY 98 budget request. The table below details the budget story as it now stands for the Ocean Sciences Division at NSF and for ODP.

JOIDES has had an opportunity to react and respond to ODP's international midterm review. The result of the review, as we reported in earlier newsletters, was very positive. However, the Review Committee did make some recommendations to the Program suggesting that it should strengthen scientific leadership and that future success depended on the ability to focus on major scientific objectives. The Program was also encouraged to enhance communication and broaden its support base with the general public. At a June meeting in Oslo, the ODP Council and Executive Committee (EXCOM) met in joint session as JOIDES outlined its initial response to these recommendations and detailed what steps it had already taken to implement them. The result was a bold proposal to modify the JOIDES Advisory Structure. These changes, and associated commentary, are reported elsewhere in this newsletter. We can only hope that these changes will enfranchise a wider community, deliver science leadership and independence to the science planning body, and provide accountability and fiscal efficiency. Time will tell. It is hoped that these changes will also have a positive effect on renewal activities which are underway.

NSF plans to request funding authorization from the National Science Board (NSB) next year for the second half (1998-2003) of the approved period for the Ocean Drilling Program (1993 to 2003). At the same time, we are asking our international partners to reaffirm their commitments to continue with the Program by June of 1997.

The U.S. Science Support Program (USSSP) to ODP is also engaged in a renewal process. We recently received a revised Program Plan from JOI which outlines the Program's plans for the next three years. This summer, a panel will convene at NSF to review this plan and make recommendations. NSF will then go to the National Science Board in November seeking approval to continue the Program from March 1997 to February 2000.

JOI is finalizing and preparing to submit the ODP Program Plan for operations in FY 97 which was approved by the EXCOM at their June meeting in Oslo. NSF has given JOI a target figure of $44.4 million (U.S. plus international contributions) for the FY 97 budget, the same level at which ODP is operating in FY 96.

Our report in the November 1994 JOI/USSAC newsletter that any increase of the contribution level by the partners would be unlikely through 1998 was reaffirmed at the June meeting of the International ODP Council.

NSF - OCEAN SCIENCES DIVISION

	Actual FY 95	Current FY 96	Requested FY 97
Ocean Sciences Research	$102.6M	$103.0M	$110.2M
Oceanographic Facilities	$50.5M	$47.7M	$53.7M
Ocean Drilling Program	$39.8M	$39.9M	$40.0M
Ocean Sciences Division	$192.8M	$190.6M	$204.9M

NSF - OCEAN DRILLING PROGRAM

	Actual FY 95	Current FY 96
Operations and Management	$27.55M	$27.68M
U.S. Science Support Program	$5.19M	$5.37M
Unsolicited Proposals	$6.37M	$5.56M
Other Foundation Activities	$0.65M	$1.24M

We reported in the previous newsletter that Sandy Shor had extended his rotation at NSF until December of 1996. That has changed. Sandy will remain at NSF until August of 1997. As of this August, however, he will be with the Oceanographic Instrumentation and Technical Services Program while Lisa Rom is away from that program for a year. Below there is an advertisement for the position that Sandy held within ODP. If you qualify and are interested, we would like to encourage you to submit your application for consideration.

On a sad note, we would like to express our condolences to the families and friends of both Rob Kidd and Lou Garrison as we mourn their recent passing. Both were highly regarded and well liked by their colleagues and all those who knew them. Much of Rob's career was devoted to the Ocean Drilling Program. Lou was the first Deputy Director of ODP and he continued to serve the Program on the Pollution Prevention and Safety Panel until very recently. They both will be sorely missed.

We would also like to take this opportunity to express our gratitude to Kathy Ellins and Colin Jacobs, as Executive Assistants, and Julie Harris, as Office Coordinator, of the JOIDES office for their marvelous support of ODP during the past two years and particularly for their recent efforts under trying circumstances. We wish them well. The JOIDES office moves to Woods Hole Oceanographic Institution on October 1.

POSITION AVAILABLE: Associate Program Director

Ocean Drilling Program/National Science Foundation

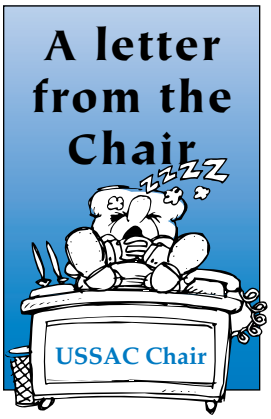
NSF's Division of Ocean Sciences is seeking qualified applicants for the position of Associate Program Director in the Ocean Drilling Program. This position will be filled under the Intergovernmental Personnel Act (IPA) in the fall/winter 1996. IPA applicants must be permanent, career employees of their current employer for at least 90 days prior to entering into a mobility assignment agreement with a federal agency. Duration of the assignment is one year, although it may be extended for a second year. Reimbursement of salary and other related costs are negotiated between NSF and the individual's institution.

The Associate Program Director has primary responsibilities which involve proposal evaluation, project development and support, program planning and budgeting, and related administrative duties.

Applicants for this position must have a Ph.D. or equivalent experience in marine geology or geophysics or a related disciplinary field. Four or more years of research experience beyond the Ph.D. and a broad understanding of the current status of the relevant U.S. academic scientific community and its relationship with NSF, other federal agencies, and international planning efforts are also required. Previous involvement with ocean drilling would be an advantage, but is not required.

Interested applicants must submit a letter of recommendation and a curriculum vita to the National Science Foundation, Division of Human Resource Management, Attn: Catherine Handle, 4201 Wilson Blvd., Suite 315, Arlington, VA 22230. For technical information, call Dr. Bruce Malfait, Ocean Drilling Program, (703) 306-1581. Hearing-impaired individuals should call TDD at (703) 306-0189.

NSF is an equal opportunity employer committed to employing highly qualified staff that reflects the diversity of our nation.



My two cents worth on JOIDES' reorganization

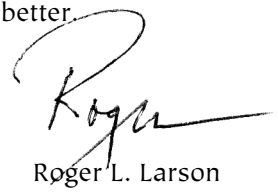
"We trained hard, but it seemed that every time we were beginning to form into teams, we would be reorganized. I learned in later life that we tend to meet any new situation by reorganizing; and how wonderful a method it can be for creating the illusion of progress while producing confusion, inefficiency and demoralization,"
Gaius Petronius, AD 66.

Dr. Roger Larson is Professor of Marine Geophysics, Graduate School of Oceanography, University of Rhode Island.

The above quote kept running though my head (along with, "If it ain't broke, don't fix it") as I sat with PCOM in Aix, France in April creating the first major changes to the JOIDES Advisory Structure in at least eight years. Those of you who have heard of these proposed changes may be thinking the same things. A more detailed description of the proposed new structure appears elsewhere in this newsletter, but here are my general feelings on the subject.

First, I think it was mostly PCOM that was "broke," not the panels. The proposed new structure lumps the four existing thematic panels into two, and asks them to review and grade, but not rank, proposals. The idea of not having the panels rank proposals is that the Science Committee (SciCom), the new PCOM, will now be forced to do it, as they should. There will also be some outside, mail reviews of the "best" proposals, and probably better formulated input from and closer relations with Working Groups who may act to support proponents. So there will be some differences for the new thematic panels, but nothing of a catastrophic nature. However, PCOM was another story. ODP's ever-increasing drilling, logging and measuring capabilities, coupled with the seemingly constant outside reviews of ODP and the myriad of drafts of long-range planning documents had seized so much of PCOM's time and energy that they had lost the capability to do their primary job; to really discuss, review and rank the proposals presented to them by the panels. Thus, the Operations Committee (OpCom), a subcommittee of SciCom, is proposed that will deal with short-term operational issues, including drillship scheduling, technical trade offs, and probably input from the service panels. There will be some overlapping membership between SciCom and OpCom, so the right and left hands can keep track of each other. Hopefully, this will clear enough of these issues off SciCom's plate that they will be able to focus on their primary mission of being the final arbiters of the science of the program.

Will this work better than before? There are no guarantees. Clearly there will be some necessary course corrections as the new system is implemented, so we shall all have to be patient and tolerant. The optimist in me says that this will be a better system. It was designed by the users, and it will be implemented and fine tuned by us. ODP's international advisory structure is already one of the marvels of the modern scientific world, and the proposed changes should make it even better.



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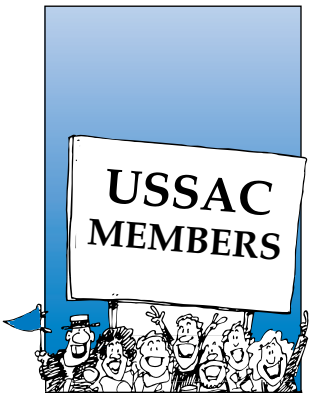

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Post-cruise opportunity for Saanich Inlet cores:

Study of ultra-high-resolution climate change in the Holocene

JOI/USSSP will make limited funds available for post-cruise scientific research stemming from ODP's coring of a western Canadian fjord during subleg 169S. Two sites will be cored during August 19-21 in Saanich Inlet, near Victoria, British Columbia. Canada's Dr. Brian Bornhold will be Chief Scientist.

The USSSP funding procedures will vary from normal procedures because drilling lasts only two days and because the shipboard party is significantly smaller than normal. U.S. scientists interested in this opportunity should send a curriculum vitae and a cover letter detailing their scientific research plan to both:

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SCIENCE PLAN

During Leg 169S ODP will drill into a rapidly deposited stratigraphic sequence that promises an ultra-high-resolution record of Holocene environmental change. Sedimentation rates of approximately 780 cm/kyr are anticipated from a presumed basal age of 16,000 years and a sequence thickness of 125 m.

The scientific objectives of Saanich Inlet drilling are to:

1. Obtain a detailed record of Holocene climate, oceanography, marine productivity, ecology, and terrestrial vegetation;
2. Establish the frequency of earthquakes in the Cascadia convergent margin (particularly those greater than magnitude eight);
3. Advance our understanding of diagenesis in organic-rich sedimentary basins and especially the role of microbial processes. The finely laminated (varved) sediments thought to have accumulated in the inlet since deglaciation will be cored at two sites in the deeper axial region of the fjord; these two sites (at 200 and 225 m water depth) have significantly different organic contents and accumulation rates. Saanich Inlet will provide an important companion to the high-resolution Site 893 drilled in Santa Barbara Basin (Leg 146) and Site 1002 drilled in Venezuela's Cariaco Basin (Leg 165).

Approximately 100 to 125 m of Holocene diatomaceous silts and clays and upper Pleistocene glaciomarine muds will be cored to refusal with the advanced hydraulic piston corer (APC) at the two sites. Both sites will be triple APC cored. If additional time is available, each site will be APC cored four times. If time is short, only the northern site will be triple cored. Temperature measurements will be made in the lowermost part of the proposed Site SI-02B if time permits. Only the A hole from each site will be measured using the multisensor track (MST), split, and photographed on board. The B and C holes will be measured at sea using the MST during Leg 169 and returned to the core repository at ODP/TAMU for further work. Sampling of the A holes will occur the week after the cruise at the Pacific Geoscience Center, in Sydney, B.C. Sampling of the B and C holes will occur at in November at ODP/TAMU.

