



MINUTES

ATLANTIC REGIONAL PANEL

MIAMI (Florida) - U.S.A.

MAY 15-17, 1984

Members present:

Dr. AUSTIN

BALLY (Tectonics Panel Liaison)

BUFLER (PCOM Representative)

ELDHOLM

GARRISON (ODP representative)

HONNOREZ (PCOM Chairman)

JANSA

KIDD

KLITGORD

MONTADERT (Chairman)

MUTTER

SCHLAGER

THIEDE

TUCHOLKE

1 - Klitgord distributed new, digitized maps of the N. Atlantic (Coastline, magnetic anomalies, seamounts).

2 - Montadert reported on the last PCOM meeting in Washington. He was in a difficult position at this meeting because the panel was not ready at that time to define priorities.

The essential task of this May meeting is therefore to set clear priorities for the whole Atlantic program.

The minutes of the last meeting were approved.

3 - L. Garrison reported for the ODP Science operator. The cost overrun is not excessive. Station-keeping ability for the new ship will need more attention.

a) Science space laboratory arrangement:

The original plan was for 3 levels below deck, 4 levels above. To avoid stability problems SEDCO advised only 3 above deck levels. Other spaces are available to make up for the loss of science areas on the remaining deck.

b) Up to 50 Science berths will be available including 20-25 for technicians.

Montadert: Can we expect bare rock drilling for leg 103? The answer is no, but probably for leg 110. It is a funding problem and there are too many things to do. 2M \$ are still not committed by NSF.

c) The cryogenic magnetometer and the long range gear will be bought.

d) Austin and Schlager have been invited as co-chiefs for the Bahamas Leg and Westbrook and Speed have been asked as co-chiefs for the South Barbados leg.

e) Austin asked for discussion of Salisbury's call about the possibility of cancelling logging on the first leg. This news provoked unanimous protest on the panel. Bally considered it absurd, particularly for a carbonate leg.

Montadert: Can the ship go into Baffin Bay? The answer is yes.

Montadert: How will the ship do in the "dipping reflectors" sequence, where alternating volcanics and sediments may be found? The "extended core barrel" (XCB) must be used.

4 - Bahamas

There was a presentation of the cruise nationale by Austin and Schlager and discussion of the SOHP consensus concerning study of a Little Bahamas "natural laboratory":

ARP recommends the following drill site priorities for the Bahams leg:

- 1) Florida Straits (FS) deep penetration (=1000m);
- 2) Little Bahama Bank (LBB) slope (2 shallow holes);
- 3) Exuma Sound (ExS) deep penetration (=1300m);
- 4) Exuma Sound slope (2 shallow holes);
- 5) Eleuthera fan (1 deep hole, 1 shallow hole).

The primary objectives of this leg are thus:

- A) stratigraphic and lithologic comparisons of the depositional histories of platforms and basins; documenting the Cretaceous and Tertiary upbuilding, progradation and retreat of the Bahama platforms;
- B) Deposition, dissolution, and erosion on platform slopes and their correlation to sea-level, water depth and environmental setting.

Site 1 (FS) remains the highest priority site for ARP, yielding important information for priorities A and B as well as providing a link between Atlantic and Gulf of Mexico stratigraphy. This site provides the additional advantage that it lies between deep exploration wells on the adjacent platforms. In the light of recently completed geophysical site surveys, the seismic stratigraphy in the vicinity of the site is very well defined and allows evaluation of the regional significance of the site.

Site 2 (LBB) evaluates an accretionary (prograding) slope in an open ocean environment. This suite of sites is also one of the major priorities for this SOHP panel.

Site 3 (ExS deep) satisfies objectives A and B in an area where subsurface sampling merged with drill-hole data from site 1 and deep exploratory wells would establish the regional coherence in the seismic stratigraphy and constructional history. Results could then be extrapolated to other deep basins because available seismic profiles show stratigraphic units of similar acoustic character in the various channels.

Site 4 (ExS slope) documents slope deposition on a bypass slope in a protected reentrant. This transect is necessary for comparison with the accretionary slope transect of LBB (site 2).

Site 5 (Eleuthera fan) will complement the above work on platform slopes by documenting a carbonate submarine fan, its depositional history with respect to sea level, and the interplay of turbidite deposition, carbonate dissolution and erosion by contour currents.

The ARP recommends the following drilling plan for the Bahamas leg:

Site 1	Florida Straits	1000m	10 days
Site 2	Slope LBB	2 x 200m	4 days
Site 3	Exuma Sound	1300m (possible) reentry	18 days
Site 4	Exuma slope	2 x 200m	4 days
Site 5	Eleuthera fan		10 days

Transit	5 days
Transit in Bahamas	3 days
Total	54 days

Moved: A.W. Bally
 Seconded: O. Eldholm
 Vote: Unanimous

The proposal by the Atlantic Regional Panel to move drilling in the Bahamas to second position (March-April, 1985, leg 102) is based upon our present information that logging will not be available during leg 101. Bahamas planning now includes 2-3 single bit holes of a kilometer or more, and 4 HPC holes of approximately 200m each. Logging is critical for all of these holes, and reentry is not anticipated, scheduled for only one hole and only as a contingency measure. If logging were delayed, valuable time would be spent preparing holes for subsequent reentry, resulting in an abridged scientific program. This is a comparatively minor problem in the Yucatan Basin, where only a single deep hole is expected.

5 - Labrador

A revised proposal by the site proponents group was distributed and was presented by L. Jansa.

Two options were proposed:

Option 1 - BB1, BB3, LA2, LA5

Option 2 - LA2, LA3, LA5 (reentry), LA6.

Bally pointed out that safety problems were likely in BB2 and BB3. Surveys are needed.

Jansa suggested that the sites could be moved offshore to Eocene targets.

Montadert proposed that we accept both options.

Bally: If we decide to cut the BB sites, what is the gain?

Garrison: Going into Baffin Bay obliges us first to go into the Norwegian Sea; this would cost a lot in transit time.

Jansa: Normally it is feasible to work in this area for about two months in the year but some changes can happen. The survey will be done if drilling is decided upon. A ship will go anyway and its program can be changed.

SOHP proposed a different scenario: BB, then LA3, LA5, LA6.

ARP final recommendation:

The panel considered options proposed both by the Labrador group and by SOHP. The options are: A) drilling of sites in both Baffin Bay and the Labrador Sea; B) drilling limited only to the Labrador Sea.

The panel considered the following logistics of the drilling in Baffin Bay:

- a) the circumstances of unpredictable ice conditions in the Baffin Bay;
- b) the need for an escort vessel;
- c) the need for site surveys in the Baffin Bay for which funding at present time is not positively available;
- and d) the fact that the narrow weather window (around Sept.) would require

Norwegian Sea drilling first (and thus wasteful criss-crossing of the Atlantic). Although the science is extremely interesting, ARP felt that the logistic disadvantages presently argue against Baffin Bay Drilling. Thus ARP recommended Labrador Sea drilling without the Baffin Bay option during 1985.

6 - Norwegian Sea

A detailed drilling proposal was presented by the Norwegian Sea Working Group (NOR) (O. Eldholm).

ARP stressed that the proposal is based on a series of PCOM recommendations emphasizing drilling in dipping reflector sequences and its base (reflector K) is a first priority for the early history of passive margin evolution. However, ARP recognizes the importance of obtaining continuous sediment cores for paleoenvironmental studies. The present proposal includes major paleoenvironmental objectives also.

Motion: ARP considered the two scenarios for drilling proposed by NOR (page 13) and considered scenario B to be more attractive and realistic, but strongly recommends to drill site 2B (or 3B) before 2A (or 3A) because of the great significance of penetrating reflector K (base of the dipping sequence).

Moved by Schlager and seconded by Kidd

Vote: Unanimous

ARP recommended all drill sites be continuously cored.
Thus, the recommended drilling sequence is:

VOR 2B (3B)	HPC in sediments, Re entry
VOR 2A (3A)	HPC in sediments, Re entry
VOR 4	HPC in sediments
VOR 5	HPC in sediments

7 - Barbados

In its last March meeting in Washington, PCOM suggested 2 legs:

- 1) - a N. Barbados transect
- 2) - a S. Barbados transect.

Drilling on the Northern Barbados transect through the decollement zone has always been considered as the first priority for this fore-arc drilling. Now, it will occur later in the program while the second priority N. Barbados transect will be moved to leg 102.

The panel regrets that such a decision has been taken: after the CWG reported directly to PCOM without no previous discussion by ARP.

ARP recommended drilling in the area of Barbados North as approved by PCOM; completing the program started on leg 78A is of highest priority.

8 - Mediterranean

Montadert explained the broad objectives of the two legs proposed by the Mediterranean WG after their last meeting. ARP has a great deal of enthusiasm for the idea of Mediterranean drilling. The scope of a drilling program in the Tyrrhenian Sea goes well beyond the solution of "local" problems. It has for some time appeared that the opening of the Tyrrhenian Sea, as well as the Northwest Mediterranean Basin, is coeval with much of the younger compressional deformation in the Apennines. Thus, extension and compression in the central Mediterranean "backarc" system appears to be linked. To get a closer handle on the Tyrrhenian opening, the kinematics of oblique slip systems need to be dated.

Because at this time ARP has had no effective input from the Mediterranean Working Group, we know little about the preparatory work for the Tyrrhenian leg. We fear that we may quickly run out of time to carry out the geophysical studies site surveys that are going to be needed to give drilling the priority it deserves. The PCOM does not help matters by allowing Working Groups to present their case without consultation with ARP. Similar arguments may be made for the Eastern Mediterranean leg. This leg is less well focused than the Tyrrhenian project. One half of this leg would be dedicated to the Mediterranean Ridge addressing the same set of questions as Barbados drilling, but in an area that is less well documented and tectonically less well constrained than that of Barbados. The other half of the proposed leg, the Malta escarpment and Ionian Basin, will address mainly regional problems. We feel that, at this point, the Eastern Mediterranean leg is of lower priority than the other legs proposed for this first round of Atlantic drilling.

9 - N.W. Africa

Three proposals with paleoenvironment objectives were discussed:

1. - Ruddiman et al.
2. - Sarnthein et al.
3. - Weaver and Kidd.

The first two proposals were presented by Thiede with all sites relocated on a single map. Bally reacted adversely to the statement frequently found in these proposals: "no site survey needed", even when the geophysical data available are poor. This seems to imply that drilling alone is sufficient for paleoenvironment studies. Each hole must be taken in its geological context.

The proposal for drilling in the Madeira Abyssal Plain and Rise (Weaver/Kidd) was presented to the panel and was well-received. The approach would be for HPC and XCB coring at two sites to identify the history of turbidite and debris flow input to the basin and so to establish their relationship to sea-level change and overall sediment stability on the margin. Another Madeira Abyssal Plain proposal (from the Netherlands through the ESF) had similar objectives and the panel recommended combination of the two proposals.

Two proposals concern passive margins objectives:

Winterer-Hinz propose: 1. - to complete site 547 and log it; 2. - to drill MAZ8 and again log.

After a long discussion the panel asked for more documentation on these proposals to be made available for the next meeting. Drilling MAZ8 could be combined with other paleoenvironmental sites in a single leg. This will be considered at the next meeting.

Hayes, Mountain, Rabinowitz and Austin propose deep holes to investigate the continental margin off Morocco.

Moroc 1 is an equivalent of the 547

Moroc 2 and 3 require deep penetration drilling of more than 3km, thus exceeding by nearly two times the deepest "Glomar Challenger" penetration during DSDP. This proposal is preliminary but very interesting and must be discussed further. Austin remarked that drilling on the Galicia margin would be easier and would tackle similar overall objectives.

In conclusion, the ARP unanimously proposed to devote one leg of the ODP entirely to study the late Cenozoic paleoenvironment of the equatorial and tropical North Atlantic. The Cenozoic history of the Atlantic equatorial current regime, the subtropical northern hemisphere atmospheric circulation, the upwelling region off NW Africa and the North African paleoclimate can be addressed by transects of relatively short drill holes in the deep-sea basins between the Mid-Atlantic Ridge and the NW African continental margin. The ARP is convinced that these coherent paleoenvironmental objectives address unique and important elements of the global atmospheric and oceanic circulation patterns. The deeper and older margin proposals in the area are deemed important, but based on the presently available rationale they clearly rank behind the paleoenvironmental objectives. The competing paleoenvironmental proposals have to be merged into one coherent drilling plan (Ruddiman et al., and Sarnthein et al.). Following the recommendations of SOHP, we propose drilling the following SOHP priority sites: MAU-5; MAU-6; MAU-4 (EQ-2); SLR-1 EQ-3, 4, 5, 6, 9; along with MAP-1 (proposed by Weaver and Kidd).

10 - Galicia Bank

The Galicia Bank proposal presented by G. Boillot at the last ARP meeting in Paris, Was again briefly discussed.

In agreement with the Tectonics panel, ARP strongly recommended a leg of drilling on the Galicia margin. The leg is aimed at studying fundamental aspects of passive margin evolution in a geophysically well-surveyed area with little sedimentary cover (a starved margin). Here post-, syn- and pre-rift sediments, as well as basement, can be reached. The results are expected to yield a model for the change from rifting to drifting at a margin that is not associated with early opening volcanics (as on the Norwegian sea margin). ARP noted that Galicia Bank is excellently surveyed geophysically and that the scientific problems are well identified. This leg is considered to be the eastern part of a conjugate margin study in which drilling off Canada has already established part of the pre-rifte and synrift history on the Grand Banks (Hibernia) and a synrift early post-rift history can be evaluated by a Newfoundland basin drilling leg anticipated later in the program..

11 - Yucatan

The panel reviewed again the Rosencrantz proposal.

Three possibilities were discussed:

1. - A single hole with reentry YB2C;
2. - A single bit hole 7D plus a reentry hole YB2B after washing the top of the section;
3. - A reentry hole YB2A then 7D if basement is not attained.

The third option was unanimously agreed upon.

A long discussion followed on the respective merits of the Yucatan proposal versus the South Barbados transect: the panel was unanimously in favour of the Yucatan drilling as of higher priority.

The ARP unanimously endorsed the drilling of a deep hole in the Yucatan Basin as the first leg of the program. This hole should be left in a condition in which it can be re-entered for logging. The hole will test the new vessel's deep drilling capability, and establish the early history of the Yucatan basin, a major unknown element in reconstructions of the Western-North Atlantic, Gulf of Mexico - Caribbean system. Scientific objectives include calibration of the stratigraphy of the region, recovery of the oldest sediments over the basement and determination of the age and nature of the basement. The vote for Yucatan was reached after detailed comparison of the Yucatan and Barbados-South projects.

12 - ENA 3 and 417/418

The engineering leg scheduled to test bare rock drilling is being postponed. The ARP suggested using the available drilling time for further drilling at ENA3 and logging at 417/418. ENA3 remains a high priority site as a stratigraphic reference section for the western Atlantic basin and eastern North American margin. The bottom 200-300m was not cored at site 603 and must now be cored, the basement reached and drilled into and then the hole logged. It is not possible to re-enter site 603 because it is obstructed by the lost drillstring; thus the part of the section cored at 603 can be washed through. Re-entry will be required. The time estimate for completing and logging ENA is 3 weeks.

13 - MARK

Drilling in the Mid Atlantic Ridge/ Kane fracture zone has been discussed extensively by the ODP Lithosphere Panel. We endorsed these plans and assumed that bare-rock drilling capability will be available by the scheduled dates.

14 - Drilling program proposed by the ARP

ARP unanimously proposed the following drilling program in the Atlantic:

1985	J	Yucatan
	F	
	M	Bahamas
	A	
	M	ENA 3, 417 (short leg)
	J	Labrador (whitout BB)
	J	
	A	Norwegian Sea
	S	
	O	Galicia
	N	
1986	D	NW Africa (Paleoenv.)
	J	
	F	Mediterranean
	M	
	A	Mark
	M	
	J	Barbados North
	J	

If Yucatan and Norwegian Sea legs have to be postponed for political reasons, ARP recommends replacement of the Yucatan leg by a South Barbados leg, and of the Norwegian sea leg by a NW Africa leg combining paleoenvironment and passive margin objectives.

15 - The Atlantic Drilling Program in the Framework of COSOD Scientific Recommendations.

The panel considers unanimously that the merits of the proposals for Atlantic drillings must be judged in the framework of COSOD Scientific recommendations.

In the following table the different legs of the ARP proposed drilling program are considered in this framework.

<u>COSOD Scientific Objectives</u>	<u>Legs Proposed</u>
1. Magma generation MOR	417, MARK, Galicia, Yuc, Lab
2. Hydrothermal	MARK, Galicia, Med, Norw
3. Early rifting passive margins	Galicia, Med, Norw

4. Dynamics of forearcs	Barbados N
5. Structure/Volc. history island arcs	Barbados N., Med, Yuc
6. Sed. response to sea level	ENA3, Lab, Bah, NW Afr, Yuc
7. Oxygen deficient basins	NW Afr. upwelling
8. Global mass balancing seds	All
9. Ocean circulation	NW Afr, Lab, Norw, Yuc, Bah, ENA3
10. Atm/ocean response	NW Afr.
11. Micro-organism evolution	All
12. Earth's magnetic field	Norw, Lab, ENA3
13. Tectonics (plate kinematics)	Yuc, Gal, Norw, Lab, Med
14. Evolution of carbonate platform	Bah, Yuc

16 - ARP responsibilities

ARP, in reviewing the JOIDES Terms of Reference, notes that it is changed with the following responsibilities:

- A. Helping translate thematic programs into concrete drilling plans
- B. Identifying regional problems not covered by Thematic Panels
- C. Recommending integrated drilling programs in the Atlantic
- D. Monitoring knowledge of regional geology and geophysics
- E. Advising on regional and site surveys needed for future drilling.

Thusfar, we have been frustrated in our attempts to accomplish items A and C by the following factors:

1. The scientific rationale (as opposed to site priorities) for the thematic programs, as developed by thematic panels, has not been conveyed adequately to ARP. We feel it is critical that ARP have minutes of Thematic Panel meetings and a liaison member of the panels at ARP meetings.
2. The Caribbean Working Group and the Mediterranean Working Group have (with the exception of a preliminary overview) not conveyed to ARP their scientific proposals.
3. Without these inputs ARP finds it extremely difficult to evaluate all the Atlantic drilling targets, prioritize them, and recommend an integrated drilling program.

We also find that the function of recommending an integrated Atlantic drilling program has been largely undertaken by PCOM. This is to some extent necessary in the start-up stage of ODP, but we would like clarification as to where the primary responsibility for this function lies.

If, as has been the case so far, responsibilities A and C are pre-empted by other panels and working groups, then much of the reason for the existence of an Atlantic Regional Panel disappears. The ARP therefore requests from PCOM, a clarification of its responsibilities and the implementation of effective interaction between ARP, the Thematic Panels and the appropriate working groups.

17 - Next meeting

The next meeting will be held at Grenoble (France) in the Geological Institute of the University the 11th, 12th, 13th of September 1984

A field trip will be organized by Prof. Lemoine, the 14th, 15th, 16th of September: "A transect of the Mesozoic margin in the Western Alps".

The meeting after that might be at Austin (Texas) or in Barbados.