

SITE SURVEY PANEL

DRAFT MINUTES

of meeting at

Laboratoire Geodynamique Sous Marine
at
Villefranche sur-Mer, France

November 4 - 6, 1986

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SITE SURVEY PANEL

EXECUTIVE SUMMARY - VILLEFRANCHE MEETING

November 4 - 6, 1986

1. Duennebier's Underway Geophysics Report was reviewed. TAMU already responding; further tests scheduled for Leg 112 T over Christmas.
2. In response to a letter the SSP passed a motion which emphasized its preference for digital seismic data whenever possible. Furthermore, "If a planned hole is to be logged, then there should be a digital record made by the RESOLUTION of the seismic structure on-site for later correlation purposes."
3. The next SSP meeting will be January 13 - 14, 1987, at Lamont, immediately before PCOM. Data sets for the western Indian Ocean will be reviewed in detail there.
4. Site Survey Status, Antarctic and Indian Ocean:
 - a) Weddell Sea - O.K. Sites W-5 alt., W-12, W-13 weakly supported by data.
 - b) Sub-Antarctic - Recently completed site surveys will be reviewed at January meeting.
 - c) SWIR - Recently completed site survey will be reviewed at January meeting.
 - d) Red Sea - status unchanged since August PCOM.
 - e) Intraplate Deformation - Recently completed site survey will be reviewed at January meeting.
 - f) Ninetyeast Ridge - Recently completed site surveys will be reviewed at January meeting.
 - g) Neogene I - Recently completed site survey will be reviewed at January meeting.
 - h) Neogene II - Some problems exist with some sites as currently proposed.
 - i) Makran - MCS cruise underway Nov.- Dec. '86. Processed seismic due March, 1987. Initial review in January. GLORIA survey in February, 1987.

j) Kerguelen:

- (i) N. Kerguelen O.K.
 - (ii) Central and South Kerguelen appear O.K. Timely completion of seismic processing essential here.
 - (iii) Prydz Bay. Currently available data are not adequate for drilling. Poor quality shallow data and lack of crossing lines are the critical problems. Outside chance of Russian data. Only other option is to survey with RESOLUTION if PPSP willing to approve drilling on basis of currently available information. An early look by PPSP is strongly recommended.
- k) Broken Ridge - Recently completed site survey will be reviewed at the January meeting.
- l) Argo/Exmouth - Some new SCS received by Data Bank. Further review in January.

5. WPAC Site Survey Status

Generally WPAC sites are either well surveyed or plans for further surveys are in place. Major problems exist only with Great Barrier Reef and Sunda Backthrusting proposals. Little recent data is actually at the Data Bank. Data submission is urgently needed.

- a) Bonin I. - Surveys O.K. or planned.
- b) Japan Sea - Surveys O.K. or planned except for multibeam bathymetry or sidescan. Such data are essential for site J3a, and may be needed elsewhere. Water gun survey needed at JS2. Further info on shallow gas problem needed by SSP.
- c) Sunda Backthrusting - Needs crossing MCS lines and heat flow. No surveys funded to our knowledge.
- d) Banda - Sulu - S. China - Some problems exist, but surveys planned for Banda Sea where need for data is critical.
- e) Bonin - 2 - Surveys O.K. or planned.
- f) Great Barrier Reef - Problems expected with drilling in a National Park. Currently available seismic data are totally inadequate. Potentially insurmountable safety problems exist. An early look by PPSP is needed.
- g) Nankai - O.K. except for possible BSR problem at NKT-2. Slight repositioning of site or suitable cross line would resolve problem.

- h) Lau Basin - Some data exist, more will be needed particularly if bare rock drilling proposed. Need synthesized proposal and synthesis of existing data.
- i) Vanuatu - Basically O.K. Some cores and heat flow appear to be needed.
- j) Zenisu - O.K. if migration of new Japanese data done.
- k) Downhole Experiments - SSP needs more info on plans.

6. Riser Drilling Requirements

Meyer will attend TEDCOM workshop as SSP liaison. Concept of identifying "generic" deep penetration holes put on PCHMN agenda.

SITE SURVEY PANEL

ACTION ITEMS - VILLEFRANCHE MEETING

November 4 - 6, 1986

ACTION: Meyer report on 112 T tests at next SSP meeting.

ACTION: Brenner to put a note about update of Site Survey Catalog in next JOIDES Journal.

ACTION: Peirce write Pisiias regarding SSP liaisons and January meeting. Done in Villefranche. In view of the large number of data sets in the Western Indian Ocean coming available for review, the next SSP meeting will be at Lamont on January 13-14. A tentative agenda is attached as Appendix E.

ACTION: Brenner talk to Schlich at IOP meeting about need for full sized sections for sites KHP 1 and 3.

ACTION: Brenner write to Dr. Garrik Grikurov, Sevmorgeo, Leningrad, to ask about any Russian data in Prydz Bay.

ACTION: Jones ask Kenyon to contact Haq regarding possible mid fan site on Indus Cone in order that a GLORIA track might be planned over the site.

ACTION: Jones or Kidd bring detailed track charts and single monitor records for Makran to January SSP meeting.

Peirce talk to OGDC in Islamabad about availability of SH-1, 2, 3 lines. (Note: formal request has been made to the appropriate Ministry in Pakistan.)

Brenner request reproducible copies of Marathon lines from Leggett in order to complete regional picture.

ACTION: Brenner line up Weissel for a presentation of the Intraplate Deformation site survey results at the January SSP meeting.

ACTION: Brenner contact Curray and Sclater to insure that full data sets for the Ninetyeast are available for review at the January SSP meeting. Curray has not yet received the seismic tapes from Lamont. As this is of particular concern, Brenner should try to expedite action on their delivery if he can.

ACTION: Brenner line up Weissel to present Broken Ridge site survey data at January SSP meeting.

ACTION: Larsen will take over as watchdog from Weigel for the Argo/Exmouth proposals.

Wiedicke send proposals. Larsen review same with Von Rad and be prepared to review site survey situation at January meeting.

ACTION: Hey prepare concise summary of available data for Bonin-I proposal for future reference.

Brenner start inquiring about getting data sent to Data Bank. Mauffret urge WPAC to start getting data into Data Bank.

Suyehiro check on availability of GSJ 1985 MCS data.

ACTION: Suyehiro ask Tanaki to explain to Meyer at WPAC meeting why reentry is needed at so many sites in the Japan Sea. Reason is not clear from stated objectives.

Mauffret provide Brenner with map of French Seabeam coverage in the Japan Sea.

Suyehiro check into details of the shallow gas problem in the Japan Sea. What criteria has the site proponent used to avoid gas prone sites? Would additional watergun SCS increase the 'comfort level' for successfully avoiding shallow gas?

ACTION: Peirce write to Taylor highlighting SSP concerns about need for crossing MCS and heat flow for the Sunda proposal. (Done in Villefranche).

Weidicke send Larsen copy of proposal.

ACTION: Mauffret check with Silver at WPAC meeting regarding his plans for Banda Sea site survey.

Larsen check with Van Hinte/Jongsma regarding Dutch data.

- ACTION:** Peirce write to Pautot regarding data quality for sites SCS-1 and 2.
- ACTION:** Hey summarize detailed information on existing data for Bonin-Mariana - 2 for future reference.
- ACTION:** Suyehiro obtain release of JNOC-55 data set in Nankai. Also discuss with Taira the BSR problem at site NKT-2.
- ACTION:** Meyer ask Gill to prepare a full report on site survey status for Duennebier. In particular, what work is planned by Cronan on the Washington in 1987?
- ACTION:** Brenner contact Fisher (USGS) regarding migration of MCS at D'Entrecasteaux. Search existing core locations in Aoba Basin.
- Mauffret take action to have Charcot site survey data submitted to Data Bank. Ask WPAC panel for their opinion regarding the need for heat flow data to support the 5 scientific objectives at the Coriolis Trough.
- ACTION:** Suyehiro try to clarify what downhole experiments are being planned for WPAC holes and to identify any special site survey needs associated with such experiments.
- ACTION:** Peirce ask Taylor to put this item on the PCHMN agenda. (Done in Villefranche).
- Meyer attend TEDCOM workshop as SSP liaison.
- ACTION:** All SSP members forward national ship schedules to Peirce and Weidicke before January meeting.

OCEAN DRILLING PROGRAM
SITE SURVEY PANEL MINUTES
LABORATOIRE DE GEODYNAMIQUE SOUS-MARINE
VILLEFRANCHE-SUR-MER, FRANCE
NOVEMBER 4-6, 1986

Present: John Peirce (Chairman, Canada)
Dick Hey (USA, alternate for Duennebier)
John Jones (UK)
Birger Larsen (ESF)
Alain Mauffret (France)
John Mutter (USA, alternate for Langseth)
Kiyoshi Suyehiro (Japan)
Audrey Meyer (TAMU)
Carl Brenner (ODP Data Bank)
Tim Francis (PCOM Liaison)
Tom Pyle (JOI)
Michael Wiedicke (JOIDES Office)

Guest: Gilbert Boillot (Lab. Geodyn.)

Absent: Wilfried Weigel (Germany)

1 - PRELIMINARY MATTERS

Gilbert Boillot welcomed all to Villefranche. Regrets were received from Wilfried Weigel, who was unable to attend. The minutes from the Sidney, B.C., meeting were approved.

All action items from the last meeting were completed or work is being done on them.

2 - REPORTS

2 (A) PCOM Report (Francis)

The last PCOM meeting was in Corner Brook, Newfoundland. There was discussion at PCOM regarding the priorities of Leg 114 vs 113. PCOM stated that Leg 114 was to finish W-7 if that had not been done on Leg 113. As the Labrecque surveys found 800 m of sediment at the Sub-Antarctic sites where 500 m was expected, they will have difficulty completing their objectives at four sites. SOP and SOHP rank the Leg 114 priorities ahead of the priority of W-7. PCOM will have to readdress this question.

2 (B) JOIDES Report (Wiedicke)

The USSR will be joining ODP. The MOU is to be signed in early 1987.

The Red Sea Leg 116 is on the schedule, pending resolution of clearance problems, until the January PCOM meeting.

The COSOD II meeting will be in July 6-8 in Strasbourg. There will be five working groups, for which the Chairmen have been nominated:

- a) Global environment changes.
- b) Mantle/Crust interaction.
- c) Fluid circulation and global geochemical budgets.
- d) Brittle and ductile deformation of the lithosphere.
- e) Evolution and extinction of oceanic biota.

Attendance will be limited to 350. 150 from the U.S., 30 from each partner member, and 20 "wild cards".

2 (C) Science Operator's Report (Meyer)

Brief comments were made regarding Legs 110 and 111. Some junk was left in Hole 504B and there is a possible problem with the casing in the sediment section. Because of the problem with poor recovery in hard rock drilling, TEDCOM has recommended that a serious look should be taken at high RPM diamond drilling in this situation.

Prior to Leg 112, 4 days were lost to ship repairs. There is some question how well the HPC system will work in shallow water.

Co-Chiefs are assigned through Leg 118 except for the Intraplate Deformation option for Leg 116.

2 (D) Underway Geophysics (Hey for Duennebieer)

A summary of the report is attached as appendix A.

The recommendations include the following, within budgetary constraints:

- a) Bubble deflectors for the 3.5-kHz transducer.
- b) Test of towed 3.5-kHz fish.
- c) Installation of 3.5-kHz dome.
- d) Acquisition of a high speed streamer.
- e) Purchase of a spectrum analyzer for testing.

Meyer reported that the transit Leg, 112 T, over Christmas, will include a test of the towed 3.5-kHz fish. A high speed streamer is on loan from Labrecque and will be tested. A spectrum analyzer has been bought. The full report also mentioned that the speed of post-processing was unreasonably slow. One reason for this is that the array processor is not yet interfaced to the Masscomp processing computer. Software development is underway.

The SSP expressed their thanks to Fred Duennebier for such a timely and complete report.

ACTION: Meyer report on 112 T tests at next SSP meeting.

2 (E) Shipley Letter (Peirce)

A letter from Tom Shipley (U. of Texas, PCOM Member) to the SSP Chairman and his reply were put on the table for discussion (see appendix B). There was discussion regarding the manner in which the RESOLUTION is used for surveys on site approach and on site. Co-Chiefs are now starting to collect seismic shots while on-site (not a VSP, just stacked shots at zero speed). There was general agreement that the chairman's reply reflected the view of the SSP. To clarify the issue further, the following motion (Jones/Mauffret) was passed unanimously:

MOTION: The SSP prefers the acquisition of digital single channel seismic (SCS) data when SCS is required for site survey data.

If a planned hole is to be logged, then there should be a digital record made by the RESOLUTION of the seismic structure on-site for later correlation purposes.

2 (F) Data Bank Report (Brenner)

The FY 86 Activity report (see appendix C) was presented. The FY 86 budget was overspent by \$4-5000. The FY 87 budget is \$195,000. This includes money for a "gopher" to help with mundane jobs. A further \$10,000 of enhancements (more people time and travel \$) is under consideration by JOI.

In 1988 there is a need for a new microfilm reader/printer at a cost of \$12,000. The payback in terms of savings on commercial charges is estimated at three years.

An update to the Site Survey Catalog is planned.

ACTION: Brenner to put a note about update of Site Survey Catalog in next JOIDES Journal.

2 (G) SOP (Mutter)

There was extensive discussion of the Kerguelen site selection and data (see item 3 below).

The SOP noted that there is very little geophysical data to support drilling in the high latitudes of the South Pacific. SSP concurs in this observation.

2 (H) IOP (Mauffret)

There is some difference of opinion about the length of time needed to drill the Makran objectives. If they constitute less than a full leg, no alternatives are in place.

Falvey propped a new site on a newly reprocessed line in the Otway Basin. A BMR survey there is planned for early 1987.

2 (I) WPAC (Mauffret)

A brief overview of each of the major drilling packages was given. See detailed notes below.

Upcoming site surveys in the area include (see attached ship schedules, Appendix D):

France:

- . Sulu Sea cancelled.
- . Vanuatu - MULTIPSO (SEAPSO on schedule) MCS.

Germany:

- . Lau Basin - Sonne, Seabeam.
- . Sulu/S. China Sea - Hinz MCS cruise, probably joint with French.

Japan:

- . Nankai/Zenisu - ORI - MCS (Taira).
- . Marianas - ORI - MGG.
- . Japan Sea - ORI.

U.K.:

- . Lau Basin - chartering T. Washington in 4/87; Seabeam and sampling by Cronan.

U.S.:

- . Marianas Basin - Diving in May/August 87.
- . Banda - Proposed for digital SCS, Seabeam by Silver.
- . Sunda - MCS - March/April 1987 (? if funded).
- . Bonin - 2 ship MCS with Japanese.
- . Lau Basin - Seabeam, sampling, Deep Tow.
- . Ontong Java - Seamarc, digital SCS.

The SSP compliments WPAC on the excellent organization of the "Second Prospectus". Our job of understanding the complexities of the objectives and of starting to evaluate the available data base was made much easier by the detailed preparation which went into this summary.

2 (J) CEPAC Meeting (Peirce)

The CEPAC proposals are not yet sufficiently defined for the SSP to be able to play a major role. It was useful, however, to be able to provide them with direct advice concerning our standards.

2 (K) SSP Liaisons to Other Meetings/Next SSP Meeting

Brenner will be SSP liaison to IOP meeting in Miami on November 20-22.

Mauffret will be SSP liaison to WPAC meeting in Palo Alto, December 13-15. Meyer will also be attending WPAC meeting.

ACTION: Peirce write Piasias regarding SSP liaisons and January meeting. Done in Villefranche. In view of the large number of data sets in the Western Indian Ocean coming available for review, the next SSP meeting will be at Lamont on January 13-14. A tentative agenda is attached as Appendix E.

3 - SITE SURVEY ASSESSMENTS

3 (A) Weddell Sea (Brenner for Weigel)

All necessary data for all sites is either in hand or has just been sent. Sites W-12, W-13 and the W-5 alternate sites were approved as possible drill sites although the site survey data are poor-marginal.

3 (B) Red Sea (Mauffret)

The Red Sea situation regarding site surveys is unchanged since the recommendations of the SSP were forwarded to PCOM last summer. For the record, a copy of that letter is attached as Appendix F. The data supporting the Gulf of Aden sites are not adequate for drilling. See 4 (F) Neogene I and II.

3 (C) Kerguelen (Brenner)

Brenner reported on the meeting of the Kerguelen Working Group which he attended as SSP liaison. Eleven sites were selected, of which three are planned to go to basement.

i) North Kerguelen: All data, including core descriptions and velocities, have been received by the Data Bank. The only outstanding item is the receipt of full sized sections.

ACTION: Brenner talk to Schlich at IOP meeting about need for full sized sections for sites KHP 1 and 3.

ii) Central and Southern Kerguelen: Apparently all the necessary data are available. The seismic processing (French and Australian) is incomplete for both these areas.

Recommendation: The SSP considers it essential that the seismic data sets for Central and Southern Kerguelen be fully processed as promptly as possible in order to optimize site selection in these areas.

- iii) Prydz Bay. The existing seismic data are 6 channel Australian MCS lines with no crossings near the proposed sites. According to H. Stagg the recording system had low dynamic range which caused clipping of the digital signal of the water bottom, the bubble pulse and the water bottom multiple. Therefore the application of deconvolution is not likely to produce useful results.

Recommendation: The site survey data for Prydz Bay are not adequate for drilling on Line 21. The quality of the shallow data are very poor because of bubble pulse problems. Because of recording problems reprocessing is not likely to resolve this problem or allow multiple removal in order to understand the dipping reflectors more completely.

The lack of crossing lines is a more critical problem in light of the dipping reflectors and a minor structural culmination on line 21 in the proposed drilling area.

The currently available data are not adequate for drilling. The only solutions which the SSP can see are the possibility of additional Russian data in the area or the option of using the RESOLUTION for collecting some additional data if PPSP is willing to approve drilling on the basis of the available information. An early look at this data by PPSP is strongly recommended.

ACTION: Brenner write to Dr. Garrik Grikurov, Sevmorgeo, Leningrad, to ask about any Russian data in Prydz Bay.

4 - INDIAN OCEAN SITE SURVEY STATUS as of November, 1986

4 (A) Sub-Antartic (Brenner for Weigel)

No cores were taken on the site survey on the Polar Duke. Also the 3.5-kHz was not working. Sites 5, 6 and 8 are planned to go to basement.

Full review will be held at Lamont in January with LaBrecque present.

4 (B) SWIR (Mutter for Langseth)

Site survey currently in progress. Full review will be held at Lamont in January with H. Dick present. Langseth will be present as SSP watchdog and John Mutter as LITHP alternate.

4 (C) Mascarene Fossil Ridge

No discussion.

4 (D) Davie Ridge

No discussion.

4 (E) Somali Basin

No discussion except in the context of riser drilling. See (6) below.

4 (F) Neogene I and II (Suyehiro and Brenner)

The Conrad survey acquired 6600 km of SCS seismic (very good quality) and Seabeam data on the Neogene I sites.

Bil Haq is reportedly about to propose a mid-fan site at 21°N 65°E on the Indus Fan to a depth of 1.5 secs TWT to bottom in presumed Paleogene section.

ACTION: Jones ask Kenyon to contact Haq regarding possible mid fan site on Indus Cone in order that a GLORIA track might be planned over the site.

For the Neogene II proposal, sites CARB-2 and the easterly alternate CARB-4 site need to be repositioned somewhat to minimize the possibility of encountering a slumped section.

The CARB-1 site is said to be planned to go to basement. A comparison with nearby site 237 suggests tht no basement is within reach of the drill. Furthermore, given the high recovery at site 237 at a similar water depth, it is unclear to the SSP why site CARB-1 is needed.

4 (G) Makran (Jones)

The Darwin cruise of Bob White is scheduled from 14 Nov. - 13 Dec., 1986. He will be doing MCS in the area 22° - 25°N, 62.7° - 66.5°E. There is enough money to process 280 km of MCS by the end of March, 1987. For logistical reasons the tapes won't be in England until the end of January, so only single monitor records can be reviewed at the January SSP meeting. (Note: Survey delayed and status of revised schedule unclear as of 2 Dec. 86.)

The White survey is east of most of the SCS coverage in the area. Some reprocessing to clarify the higher frequencies in the shallow section may be needed.

The Kenyon survey in February, 1987, will survey with GLORIA over all potential sites.

No new industry data available according to White.

ACTION: Jones or Kidd bring detailed track charts and single monitor records for Makran to January SSP meeting.

Peirce talk to OGDC in Islamabad about availability of SH-1, 2, 3 lines. (Note: formal request has been made to the appropriate Ministry in Pakistan.)

Brenner request reproducible copies of Marathon lines from Leggett in order to complete regional picture.

4 (J) Intraplate Deformation (Brenner)

A sample seismic record was shown from Weissel's survey. It did not image basement. Complex faulting patterns (reverse faults dipping both N and S) were evident. Imaging of the basement surface will be essential to achieve an unambiguous interpretation here.

ACTION: Brenner line up Weissel for a presentation of the Intraplate Deformation site survey results at the January SSP meeting.

4 (K) Ninetyeast Ridge (Brenner)

Track charts of all three site surveys and a sample record from one of the southern sites were all that was available for review. Data quality was excellent on the record we saw.

ACTION: Brenner contact Curray and Sclater to insure that full data sets for the Ninetyeast are available for review at the January SSP meeting. Curray has not yet received the seismic tapes from Lamont. As this is of particular concern, Brenner should try to expedite action on their delivery if he can.

4 (L) Broken Ridge (Brenner)

One record and a track chart were all that were available. There was excellent resolution on the record we saw. Weissel reports that his survey is "adequate" for picking basement sites.

ACTION: Brenner line up Weissel to present Broken Ridge site survey data at January SSP meeting.

4 (M) SEIR

No discussion.

4 (N) Argo/Exmouth

Neville Exon has sent some SCS records to the Data Bank.

ACTION: Larsen will take over as watchdog from Weigel for the Argo/Exmouth proposals.

Wiedicke send proposals. Larsen review same with Von Rad and be prepared to review site survey situation at January meeting.

4 (O) Otway Basin

No discussion.

5 - WPAC Site Survey Status, as of Nov./86

The drilling proposals are listed in the same order as on the WPAC Second Prospectus, although discussion did not occur in that order.

WPAC data need to be submitted to the Data Bank for all proposals. Very little critical data are at the Data Bank.

5 (A) Bonin-1 (Hey for Duennebier)

The data set for this drilling package seems excellent. MCS seismic cross lines are needed and will be obtained by Taylor on the FRED MOORE in July, 1987. A concise summary of available piston cores is needed. The SSP is unaware of cores near site BON6.

ACTION: Hey prepare concise summary of available data for Bonin-I proposal for future reference.

Brenner start inquiring about getting data sent to Data Bank. Mauffret urge WPAC to start getting data into Data Bank.

Suyehiro check on availability of GSJ 1985 MCS data.

5 (B) Japan Sea (Suyehiro)

A detailed written summary of site survey status was submitted by Suyehiro and is available for the Data Bank, R/V TANSEI (ORI) will survey JIB, JID, J3A, in 1987.

All sites except JS-2 are planned to go to basement, although reasons why unclear.

JIB: Needs seismic velocity information and cores to support re-entry.

JID: Will be surveyed in 1987. This site may need Seabeam or sidescan data, but it's hard to evaluate how essential such data might be on the currently available data.

JIE: Coring planned for upcoming survey.

J2a: Seabeam or sidescan may be needed, but probably not. Adequate heat flow data exist, but need to be made available.

J3a: Seabeam or sidescan survey is definitely needed in order to provide detailed information on faulting patterns over the site.

JS2: A watergun survey is needed to provide high frequency shallow data. Perhaps the GSJ can borrow ORI equipment to accomplish this.

The SSP is concerned that it does not have enough information regarding the problems with shallow gas encountered during the DSDP leg in the Japan Sea. A more complete discussion of this topic is needed.

ACTION: Suyehiro ask Tanaki to explain to Meyer at WPAC meeting why reentry is needed at so many sites in the Japan Sea. Reason is not clear from stated objectives.

Mauffret provide Brenner with map of French Seabeam coverage in the Japan Sea.

Suyehiro check into details of the shallow gas problem in the Japan Sea. What criteria has the site proponent used to avoid gas prone sites? Would additional watergun SCS increase the 'comfort level' for successfully avoiding shallow gas?

5 (C) Sunda Backthrusting

Mauffret reported what he knew of the situation in the absence of a German report from Wong. Larsen will become SSP watchdog for this proposal.

Crossing MCS lines and heat flow are needed to adequately support this proposal. Our information is that Silver's MCS proposal was not funded. In any case, crossing MCS lines and heat flow were not planned.

A Darwin GLORIA/SCS cruise (Masson and Audley-Charles) is planned for this general area in Feb., 1988.

ACTION: Peirce write to Taylor highlighting SSP concerns about need for crossing MCS and heat flow for the Sunda proposal. (Done in Villefranche).

Weidicke send Larsen copy of proposal.

5 (D) Banda-Sulu-S. China Seas (Mauffret)

The SSP discussed the Banda-Sulu-South China transect together with the Sulu-Negros (#11 on WPAC list) and the Hayes South China margin proposal and a combined Rangin/Hinz proposal as yet unsubmitted (to compare conjugate margins of the S. China Sea).

Banda Sea - Sites in the North and South Banda Basins, the Lucipara Basin (if one can call it that), and an optional site on the Lucipara Ridge were discussed. The existing SCS (Sliver, 1983) is insufficient to image the basement ridge structure and it is inadequate for seismic stratigraphy. A comprehensive site survey is clearly needed. Some Dutch 1984/85 data should be available.

ACTION: Mauffret check with Silver at WPAC meeting regarding his plans for Banda Sea site survey.

Larsen check with Van Hinte/Jongsma regarding Dutch data.

Sulu Sea

Sulu 2 (reentry) has crossing German MCS, magnetics and gravity, Seabeam and geological sampling. Apparently adequate data exist.

Sulu 4 (Cayagan Ridge) needs a crossing seismic line. Piston core needed if reentry planned. Existing data include one MCS line, SCS, magnetics and gravity, Seabeam and sidescan.

Sulu 5 (Sulu Basin) may need a piston core if reentry planned. Existing data include MCS, SCS, magnetics and gravity, Seabeam, and sidescan.

Sulu 8 data coverage at this site is unknown to SSP.

ACTION: Mauffret ask WPAC about Sulu-8 site survey coverage.

S. China Sea/Margin

There appears to be adequate data to support the SCS-1 and 2 sites, but questions exist regarding their quality. Given the possibility of extensive sills, how definite is the 200 m depth of sediment estimate at SCS-2? Is the magnetics interpretation at the site clear enough?

The sites proposed on the China margin appear to be adequately surveyed if the sites are positioned at MCS cross lines. If any of these sites come onto a tentative drilling plan, then early action should be started to secure the release of industry well data. This will likely be a lengthy process which will be critical to attaining the scientific objective.

ACTION: Peirce write to Pautot regarding data quality for sites SCS-1 and 2.

5 (E) Bonin - Mariana - 2 (Hay for Duennebier)

Site BON-8 should be relocated to be on crossing seismic lines. Availability of Navocean SAS multi-beam bathymetry is critical because of nearby canyons.

There appears to be adequate data available for the sites on serpentine diapirs (BON 7, MAR 2, MAR 3). As these sites are reentry, geotechnical information is needed. Sediment samples taken during the upcoming ALVIN diving programs should be adequate if piston cores are not available.

ACTION: Hey summarize detailed information on existing data for Bonin-Mariana - 2 for future reference.

5 (F) Great Barrier Reef (Jones)

The existing available seismic coverage is limited to 6 channel sparker data acquired by John Mutter on a 20 km spacing. These data have very poor resolution below .3 - .6 sec. A detailed written assessment of existing data and further needs was submitted by Jones and is available at the Data Bank.

Recommendation:

If sites GBR 1-3 are to be seriously considered, than an early reading is needed on the political chances for being allowed to drill in a National Park.

The currently available data are totally inadequate to evaluate sites GBR 1, 2, 3, 5c and 5d. Seismic cross lines with good deep definition, removal of multiples and reliable velocity information are badly needed. Large scale sections and proper navigation plots are not available to us.

Definition of the nature of the shallow section needs to be documented (3.5-kHz and geological sampling) to resolve questions relating to spudding in. There are apparent safety problems with reefal structures which may be insurmountable. The Safety Panel will need a very completely documented package.

5 (G) Nankai (Suyehiro)

The Nankai Trough area is one of the best surveyed areas in the world. A detailed written report by Suyehiro on the site survey status is available from the Data Bank.

Further work is planned by Taira and Shipley (ESP) in 1987.

Site NKT-2 needs to have a cross line run exactly over the proposed site in order to image properly an apparent shallow culmination of a bottom simulating reflector (BSR) at the currently proposed location.

The JNOC 55 data set is critical to this drilling and it is not yet publicly available.

ACTION: Suyehiro obtain release of JNOC-55 data set in Nankai. Also discuss with Taira the BSR problem at site NKT-2.

5 (H) Lau Basin (Hey for Duennebier)

The SSP discussion was based on a verbal report to Hey by Brian Taylor regarding a phone conversation with Jim Gill about an information meeting of Lau Basin proponents who had gathered in late October to prepare a single Lau Basin proposal. Consequently all SSP conclusions are tentative until checked against the forthcoming synthesized proposal.

Lau 1 - SW of L-11, 200 m penetration, reentry, possibly a bare rock site.

Existing data include Seabeam, 1.5-kHz and a sequence of cores by Cronan nearby. No heat flow data exist, and the Germans' experience with trying to get it was very discouraging.

Meyer expressed the need for detailed contact between TAMU and the site proponent as the proposal matures, if bare rock drilling is a serious possibility.

Lau 2 - Western edge of Lau Basin. Known data limited to 3.5-kHz and Seabeam. Sediment thickness unknown. Seismic and heat flow data needed.

Lau 3 - Tonga Ridge. Exact location unknown to SSP but extensive data should be available. Questionable if seismic cross lines exist. Seabeam coverage is only on northern part of Tonga Ridge.

Lau 4. Tonga forearc at the trench/slope break. Seabeam needed. Cores will be needed as this is a reentry site.

Lau 5. Near Valu Fa in a small perched basin. Sediment thickness unknown. Reentry planned. Nearby MCS, Seabeam and photo coverage exist. Cores needed, and German attempts to core nearby were unsuccessful. Heat flow and shallow source side scan also needed, and perhaps refraction.

Lau 6. Sedimentary basin between Valu Fa and Tofua Arc. Seabeam and MCS exist. Shallow source side scan needed to resolve regional tectonic setting. Synthesized magnetic interpretation needed to resolve plate geometry or at least to clarify the extent of the ambiguities.

ACTION: Meyer ask Gill to prepare a full report on site survey status for Duennebier. In particular, what work is planned by Cronan on the Washington in 1987?

5 (I) Vanuatu (Mauffret)

The drilling proposal covers three areas: the collision between the D'Entrecasteaux Ridge and the Vanuatu Trench, the inter-arc rifting in the Aoba Basin, and the back-arc Coriolis Trough.

The Charcot SEAPSO cruise in 1985 provided site surveys for the D'Entrecasteaux and Coriolis locations. To date the Data Bank has only received three track charts for these surveys. In the Aoba Basin only two MCS lines exist. A French MCS cruise (MULTIPSO) is tentatively planned to the Coriolis Trough in April/May of 1987.

Recommendations:

- 1) For D'Entrecasteaux, USGS MCS lines 100, 106 and 107 need to be migrated. Plans for this are rumoured to be going ahead.
- 2) For the Aoba Basin, no multibeam bathymetry needs to be acquired as the area is flat. Piston cores will be needed at sites IAB-1 and 2 if they are reentry sites. The existence of volcanic sills makes the need for reentry very probable.
- 3) Heat flow would appear to be highly desirable for the Aoba Basin and Coriolis Trough. It may also be needed at the D'Entrecasteaux sites.

ACTION: Brenner contact Fisher (USGS) regarding migration of MCS at D'Entrecasteaux. Search existing core locations in Aoba Basin.

Mauffret take action to have Charcot site survey data submitted to Data Bank. Ask WPAC panel for their opinion regarding the need for heat flow data to support the 5 scientific objectives at the Coriolis Trough.

5 (J) Zenisu (Mauffret)

These sites will examine the history of apparent reverse faulting of oceanic basement during subduction. Site 1 is a reference hole, 3 and 4 are on the ridge, and 5 will date the age of tilting.

Taira (ORI) plans an MCS survey in 1987. Migration will be needed to resolve fault geometry.

5 (K) Downhole Experiments in WPAC Sites (Jones)

The SSP has inadequate information on current plans. Suyehiro will take over from Jones as watchdog.

ACTION: Suyehiro try to clarify what downhole experiments are being planned for WPAC holes and to identify any special site survey needs associated with such experiments.

6 - RISER DRILLING REQUIREMENTS

Meyer reported that TEDCOM seems to be shying away from standard riser drilling as being too expensive in terms of both time and money. They are planning a January workshop at which many alternative options will be considered.

The SSP recognizes that engineers need to have specific parameters to build into their design models. Perhaps a few specific examples of generic deep penetration sites need to be identified. Two mentioned were the Somali Basin and the East Pacific Rise at 13°N. Perhaps additional site surveys will be needed just to provide constraints for design purposes.

ACTION: Peirce ask Taylor to put this item on the PCHMN agenda. (Done in Villefranche).

Meyer attend TEDCOM workshop as SSP liaison.

7 - OTHER BUSINESS

ACTION: All SSP members forward national ship schedules to Peirce and Weidicke before January meeting.

The SSP thanked Mauffret for hosting an excellent meeting. Special thanks are due to J. Coubelle, G. Boillot, J. Mascle, and all the staff of the Laboratoire Geodynamique sous Marine in Villefranche for their gracious hospitality.

Summary of Underway Geophysics Report
JOIDES Resolution Leg 111 T.

An evaluation of the underway geophysics program was conducted on the JOIDES Resolution during Leg 111T at the request of the SSP. This evaluation was in response to reports of poor results obtained on some of the early legs of the ODP. Reasons for the poor results appeared to be high noise levels generated in or by the ship, and possibly non-optimal sensor locations and towing practices. As the underway geophysical data are important, especially in remote and poorly explored regions where survey and transit data are needed, improvements in these data will be of considerable value.

The 3.5-kHz system works well with the Raytheon CESP (chirp) system and the sensor array located in the aft tank at speeds of up to 10.5 kts. No testing was done at higher speeds because of problems with the ship propulsion system. The 3.5-kHz system has problems with bubbles under the hull, which might be helped by a towed array, an array close to the bow, or bubble deflectors.

The reflection seismic system operates well at speeds up to 7 kts, but low frequency noise increases rapidly at higher speeds. As this noise was apparent on all streamers tested, much of the noise is apparently ship generated. It is likely, however, that if streamers designed for high speed were towed well behind the ship, this noise situation would improve. Useable seismic reflection data can be acquired at 10.5 kts, and possibly higher.

The digital signal channel (HIGHRES) seismic system works well and provided excellent data for further analysis, especially at survey speeds.

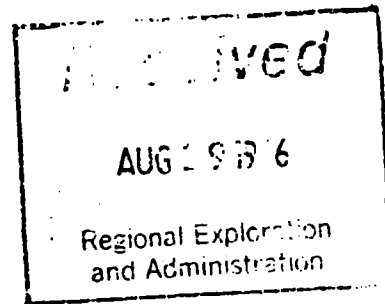
Recommendations for improvement of the system include (depending on funds available) : bubble deflectors forward of the 3.5-kHz transducer array from the ship's wake, a forward 3.5-kHz array dome below the hull, acquisition of a high-speed seismic streamer, and acquisition of a spectrum analyser for test purposes.

INSTITUTE FOR GEOPHYSICS
THE UNIVERSITY OF TEXAS AT AUSTIN

4920 North I.H. 35 • Austin, Texas 78751-2789 • (512) 458-5358, 451-6223 • Telex: 910-874-1380 UTIG AUS

August 20, 1986

Dr. John W. Peirce, Chairman
Site Survey Panel
Petro Canada
P.O. Box 2844
Calgary, Alberta T2P 3E3
CANADA



Dear John:

I wish to comment on one aspect of the Site Survey standards published in v. 12, no. 2 JOIDES Journal. I strongly disagree with your panel's lack of recognition of the high value of digital single-channel seismic data, whether deep penetration or high resolution.

I have been actively involved in collection, processing and interpretation of digitally recorded single-channel data since 1981. I had thought it was now generally recognized that collection of analog seismic data is archaic, particularly considering the low incremental cost for digital collection. The value of digital collection of reflection data (or for that matter sonobuoy refraction lines) are obvious from two general considerations.

1. Improvement of site selection by increasing apparent signal-to-noise with;
 - source deconvolution
 - well designed time-varying filters
 - time varying gain functions
 - trace mixing
 - migration (yes, it is routinely and easily done)
 - display qualities
 - full wave forms
 - lower vertical exaggeration

All of these are equally applicable to what you define as deep penetration or high resolution data.

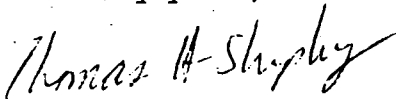
2. Post-drilling seismic to well-hole correlations.

Without digital data we cannot estimate impedance functions to correlate with well-hole estimates, or produce synthetic seismograms from the well-log data to provide precise correlations to the regional data base, the seismic data.

Almost all attempts by DSDP to rigorously tie well-holes to the seismic data base have been wholly inadequate because of poor logging and lack of digital seismics. Now we have invested heavily in logging, but collection of a digital seismic base seems in jeopardy.

I hope you will take this issue to the site survey panel for at least some discussion.

Sincerely yours,



Thomas H. Shipley
Research Scientist

THS:km

Enc.

Petro-Canada Resources

Ressources Petro-Canada

P.O. Box 2844
Calgary, Alberta T2P 3E3
Telephone (403) 296-8000
Telex 03-821524

C.P. 2844
Calgary (Alberta) T2P 3E3
Téléphone (403) 296-8000
Télex 03-821524



October 17, 1986
Ref: 444.2

Dr. Thomas H. Shipley
Institute for Geophysics
The University of Texas at Austin
Austin, Texas 78751-2789

Dear Tom,

Thank you for your letter of August 20 regarding the importance of digital seismic data in ODP site surveys. I apologize for the unreasonable delay in my response - ODP matters haven't been very high on my priority list at a time of corporate turbulence. My participation in ODP now seems to have been re-endorsed for the immediate future, so I can look ahead to the next SSP meeting.

The Site Survey Panel (SSP) concurs completely with your emphasis on the importance of high quality digital seismic data for improved site selection and post-drilling seismic to lithologic unit correlation. With the improved logging capability of the *Resolution* and the ability to do synthetic seismograms on board, the need for high quality seismic data is more apparent than ever.

When the SSP designed the Site Survey Standards matrix, those who were involved also recognized that digital seismic, however desirable, is often not available out of existing data bases. Imposing a firm guideline requiring digital seismic in any given setting might preclude many drilling ideas because of the lack of site survey data. The SSP did not wish to be seen to be setting standards that got in the way of good science. There are some in the ODP community who still argue that good geophysics is not necessary for some site surveys. While the SSP completely disagrees with that position, it wished to set standards which would be enforceable and viewed as reasonable. As time evolves and good geophysical coverage becomes more generally accepted as a norm, I see the Site Survey Standards being revised to become more stringent. I also expect to see a natural evolution in that direction as the scientific proposals become more explicitly dependent on high quality geophysics.

Your letter comes at an opportune time for discussion as we shift our focus from the data-poor Indian Ocean to the relatively data-rich Pacific. I have put the subject down for discussion at the November SSP meeting. While I would not expect a revision of standards so soon on the heels of last Spring's revision, we should be thinking ahead.

Thank you for your interest. I shall let you know how the discussion goes.

Sincerely,

Dr. John W. Peirce, *P. Geophys.*
Chairman, Site Survey Panel

JWP/jwp
Shipley 86-10-17.ODP

Data Supplied (FY 86)

Recipients listed by Institution/Country

<u>U.S.</u>	<u>#</u>	<u>% of Total Requests</u>
ODP	24	21%
LDGO	7	6%
URI	7	6%
WHOI	5	4%
OSU	4	3%
RSMAS	3	3%
UT	3	3%
DSDP	2	2%
HIG	2	2%
SIO	1	1%
TAMU	1	1%
UW	0	0
Other U.S.*	<u>26</u>	<u>22%</u>
Total U.S.	85	73%
 <u>Non-U.S.</u>		
France	12	10%
UK	5	4%
FRG	4	4%
Canada	3	3%
Japan	3	3%
ESF	0	0
Other**	<u>4</u>	<u>4%</u>
Total non-U.S.	31	27%
Total Requests	116	100%

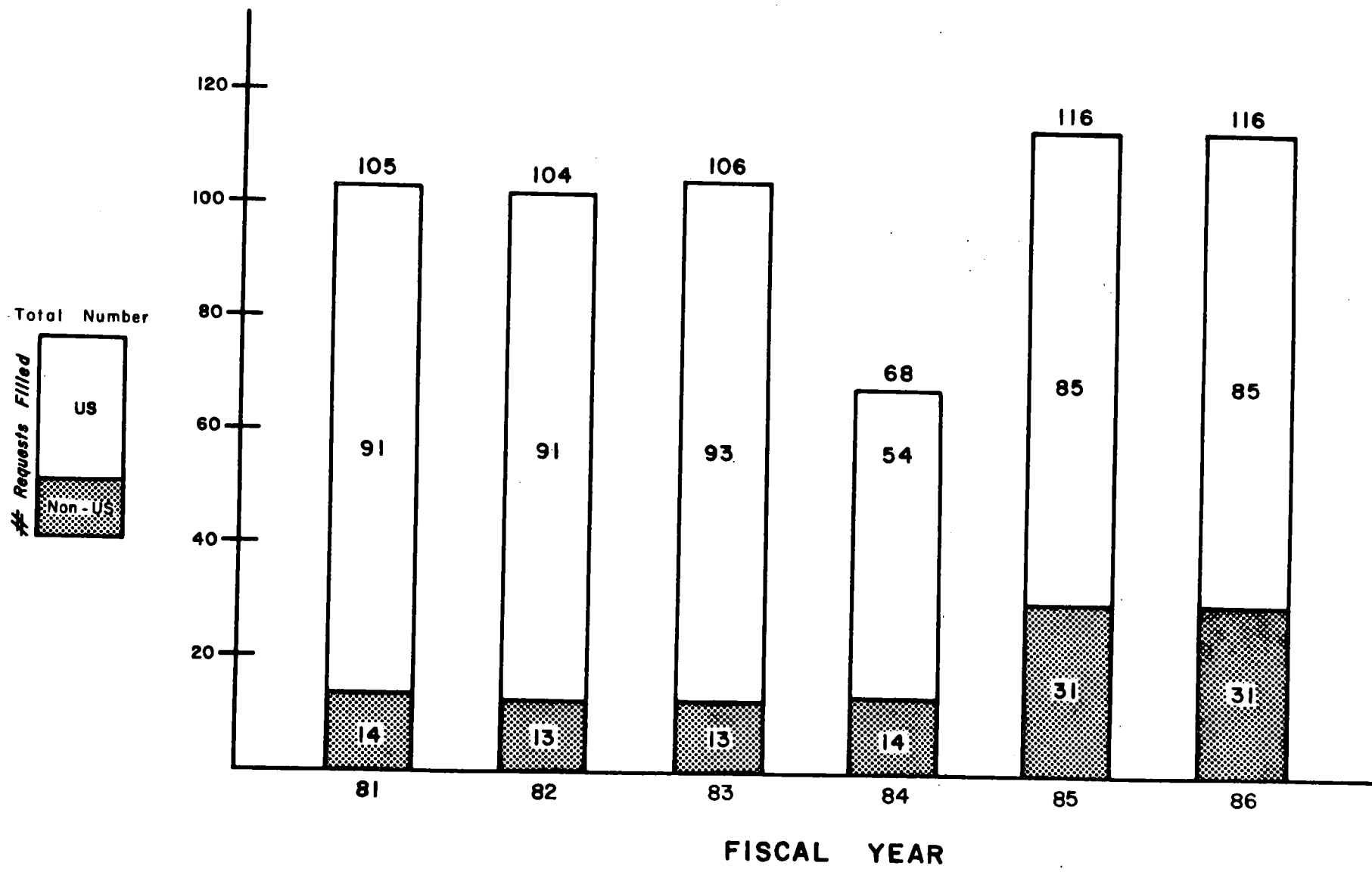
*Includes:

- a) requests filled for panel members or site proponents from non-JOI institutions
- b) requests filled for co-chiefs from non-JOI institutions
- c) requests filled for panels (such as PPSP)
- d) requests filled for post-cruise studies by non-JOI members of a site survey team

** Includes safety packages (one to each country)

Data Supplied, By Project (FY 86)

	<u>#</u>	<u>%</u>
Planning for Proposal Submission (panel or individual)	15	13%
Site Survey Planning/Evaluation	15	13%
Planning for Drilling	62	54%
Post-cruise studies	19	16%
Other	<u>5</u>	<u>4%</u>
	116	100%



FRENCH RESEARCH VESSELS 1987

(provisional)

SHIP	TIME	AREA	PROJECT	INVESTIGATOR
JEAN-CHARCOT	January February	East Pacific Easter plate	RAPANUI Seabeam - SCS Site survey	INSU (Francheteau)
" "	April May	West Pacific (Vanuatu)	SEAPSO MCS Site survey	ORSTOM (Récy)
" "	May Juny	Central Pacific (Nauru Basin)	MESOPAC MCS Site survey	INSU (Lancelot)
" "	July	East Pacific (Middle America Trench)	SEAMAT Seabeam	INSU (Bourgois)
SUROIT	April May	East Atlantic (Bay of Biscay- Galicia Bank)	REFRAMARGE Réfraction	IFREMER (Sibuet) INSU (Pascal)
"	August	West Atlantic (Barbados)	ENSBAR SAR Accretinary prism	INSU (Le Pichon)
"	October November	Caribbean Sea (Colombia and Venezuela)	DIAPICAR Coring and seismic	INSU (Vernette)
NADIR (Nautile)	September	West Atlantic	FARE Technology diving	IFREMER
"	October	West Atlantic VEMA FZ	VEMANAUT Diving	IFREMER (Auzende)
CORLIOLIS	August	West Pacific	EVA 14 Réfraction OBS	INSU (Pascal) ORSTOM (Récy)
MARION DUFRESNE	March April	South Ocean Antarctica	PALEO climatology	INSU (Duplessis)

Japanese Research Vessels

R/V HAKUHO-MARU (ORI, U. of Tokyo)	NOV 17- DEC 15, 1986	off Honshu (K. Kobayashi)
	JUL 1 - AUG 13, 1987	Western Pacific (K. Kobayashi)
	JUN - SEP , 1988	NE Pacific (J. Segawa)
R/V TANSEI-MARU (ORI, U. of Tokyo)	1987	Nankai Trough (A. Taira)
chartered ship (DELP project)	1987	Western Pacific (H. Kinoshita)
chartered ship (Earthq. Prediction Program)	1987	Japan margin (H. Shimamura)
R/V HAKUREI-MARU (JAPEX/GSJ)	NOV 22- MAR 6, 1987	Amundsen Sea
R/V TAKUYO (MSA)	routine	Philippine Sea

TENTATIVE AGENDA
SITE SURVEY PANEL MEETING
JAN. 13-14, 1987
LAMONT-DOHERTY GEOLOGICAL OBSERVATORY
PALISADES, NEW YORK

- 1. - Preliminary matters**
Introduction, schedules, minutes, etc.

- 2. - IOP Report (Brenner).**

- 3. - Site Survey Assessments and updates.**
 - a. Sub-Antarctic (Labrecque)
 - b. SWIR (Dick)
 - c. Red Sea update (Cochran)
 - d. Neogene I (Mountain)
 - e. Neogene II update (Brenner)
 - f. Makran update (Kidd or Jones)
 - g. Intraplate deformation (Weissel)
 - h. Ninetyeast Ridge (Brenner for Curray and Sclater)
 - i. Broken Ridge (Weissel)
 - j. Argo/Exmouth update (Larsen)

- 4. - WPAC Report (A. Mauffret)**

- 5. - Underway Geophysics on 112T (Meyer)**

- 6. - Next Meeting**

Petro-Canada Resources

P.O. Box 2844
 Calgary, Alberta T2P 3E3
 Telephone (403) 296-8000
 Telex 03-821524

Ressources Petro-Canada

C.P. 2844
 Calgary (Alberta) T2P 3E3
 Téléphone (403) 296-8000
 Télex 03-821524



1986 07 24

Dr. Roger Larson
 Chairman PCOM
 JOIDES Office
 Graduate School of Oceanography
 University of Rhode Island
 Narragansett, RI
 USA 02882-1197

Dear Roger:

In view of the refusal by the Saudis to allow the DARWIN to survey sites in the Red Sea, Tony has asked me to provide a concise summary of site survey status to assist the decisions which need to be made at the upcoming PCOM meeting in Cornerbrook.

Below are my comments based primarily on the last SSP minutes and Carl Brenner's June update for the Red Sea. I have assumed that the relevant German and Italian data still not in hand will be available and will be of reasonable quality. This is a reasonable assumption.

SITES

1. 17-18°N
2. Nereus Deep
3. Bannoc Deep
4. Mabahiss Deep
5. Shaban (Jean Charcot) Deep
6. Main Trough, 24°N
7. Zabargad I. and variants
8. Sudanese Delta

COMMENTS

SS data inadequate, not drillable.
 Drillable if Italian data OK.
 Drillable.
 Site 3a drillable.
 Site 3b drillable for sedimentary objectives only.
 Basement not visible on seismic.
 Site 3b not drillable (no cross line).
 Drillable.
 Drillable.
 No data. Not drillable.
 Available data inadequate.
 Not drillable.

.../2

I trust that the above meets your needs. Don't let Malpas run people to death on Table Mountain!

Warm Regards,

Dr. John W. Peirce
Prof. Geophys.
Chairman SSP

JWP/cm

cc: Carl Brenner, ODP Data Bank
Jim Cochran, RSWG
Roland Schlich, IOP