

AnSlope Planning Meeting Notes & Responses
Lamont-Doherty Earth Observatory
Meeting: 27-28 June 2002
Responses: 3 January 2003

In attendance: Arnold Gordon (LDEO), Bruce Huber (LDEO), Stan Jacobs (LDEO), Jay Simpkins (OSU), Jim Holik (RPSC), Stian Alesandrini (RPSC), Karl Newyear (RPSC)

Unless otherwise noted, all comments pertain only to AnSlope I (NBP 03-02, depart MCM 25 February, arrive LYT 11 April 2003).

USAP = United States Antarctic Program
CHC = Christchurch, NZ
MCM = McMurdo Station, Antarctica
CDC = Clothing Distribution Center, Christchurch, NZ
ECW = Extreme Cold Weather clothing, normally issued by CDC
HUE = Port Hueneme, CA
LYT = Lyttelton, NZ
TNB = Terra Nova Bay, Antarctica

General

- Arnold Gordon to be Chief Scientist for AnSlope I (NBP 03-2)
- Stan Jacobs to be Chief Scientist for AnSlope II (NBP 03-6)
- Martin Visbeck to be Chief Scientist for AnSlope III (NBP 04-2)

NBP schedule

- NBP will be at HUE 31 October - 8 November 2002. This is an opportunity to onload small boxes of personal items to help offset limits on military luggage limits on CHC-MCM flight. **NOTE:** NBP was at HUE 9-10 November 2003. All AnSlope cargo received by that time, except the mooring anchors, was unloaded and placed in the helo hangar. Open-top and closed containers with OSU mooring equipment were placed in the hold.

ACTION ITEM 1: Karl Newyear will confirm packing and shipping information and provide this information to AnSlope PIs.

RESPONSE 1: Packing and shipping instructions are available at <http://www.polar.org/usapserv/ato/index.htm> For further questions please contact Lee DeGalan at Port Hueneme (805-985-6851) or Karl Newyear. The American Tern (the cargo ship replacing the Green Wave this year) is departing from HUE on 7 January 2003. Mark for "On American Tern for onload to NBP 03-2 in McMurdo", ROS 3044. The American Tern will be in LYT 25 - 27 January 2003 and it's possible to put things on board at that time. Mark items the same as the previous option. If we miss all these cutoffs then we'll need to fly items to MCM for a drop-dead date of 25 February. Mark for NBP 03-2, ROS 3044. There are about 3 flights per week during February, so it's up to the CHC Cargo people which flight it actually gets put on depending on other priorities, etc.

- The NBP is currently scheduled to be in LYT 4-12 December 2002, though this is subject to minor modification pending discussions regarding cruise NBP 02-9 (LYT-MCM). See "NBP 02-9" section below for more details.

NOTE: The NBP was in LYT 6-11 December 2002. Miscellaneous hardware items needed for AnSlope such as chain to secure mooring anchors, etc. was purchased locally. Karl has a list of the items received.

- The NBP will be at the Ice Pier at MCM 20-25 February 2003. All science personnel will join the vessel for AnSlope I at this time.

NOTE: At this time we plan for all grantees to embark onto the NBP on 21 February 2003.

- The NBP will arrive in LYT on 11 April 2003 at the end of AnSlope I. Immediately after this date the NBP is uncommitted, and the end date of AnSlope I may change depending on various contingencies including delays due to weather or ice conditions; decisions on this topic will be made during the cruise. Future NSF-directed commitments of the NBP may remove this flexibility.
- NBP will refuel with JP-5 fuel throughout the austral summer using the MCM infrastructure. Although a full load of fuel will be taken on, JP-5 provides less power and is less fuel efficient than the diesel fuel normally used. Fuel usage rates and remaining stores must be considered when making science plans in the field. The ship's captain must have enough fuel and reserves available for the transit from the study area back to NZ, and the end date for science operations may depend on this decision, notwithstanding the above point.

NOTE: Current plans are for the NBP to take on 150,000 gallons of fuel on 31 January 2003 and another 150,000 gallons on 20 February 2003.

- See "Cargo" section for further details on science gear movement during these port calls.

Personnel

- **RPSC Staffing:** We generally agreed that RPSC would provide 10 staff for the cruise. The current staffing schedule includes 5 Marine Technicians (MTs), 1 Electronics Technician (ET), 2 Network Specialists (ITs), 1 Marine Projects Coordinator (MPC) for a total of 9. RPSC recommends that one additional ET sail to properly operate the TeraScan system. RPSC feels that a Marine Science Technician (MST) is not needed, and that lab waste disposal can be covered by other staff.

ACTION ITEM 2: Karl Newyear will consult with Senior Technicians at RPSC to finalize staffing schedule, including consideration of staffing needs for LYT-MCM cruise and MG&G cruises immediately prior to AnSlope I.

RESPONSE 2: Staffing schedules continue to evolve. RPSC now intends to sail the following staff: 1 MPC, 1 MST, 4 MTs, 2 ETs, 3 ITs for a total of 11 persons. A USCG crew member is scheduled to sail as an observer and will assist wherever necessary, bringing the total non-grantee staffing to 12 individuals. Such participation is supported by NSF.

- There was discussion of participation by NASA personnel in the cruise, including the appropriateness and the level of support required. RPSC believes there is sufficient bunk space available, though Arnold Gordon was reluctant to add this component.

ACTION ITEM 3: The AnSlope PIs will determine if NASA participation is warranted, and will inform Karl Newyear of any changes or additions to deploying science party members including the naming of TBD spots requested in the SIP.

RESPONSE 3: Karl has received no further information. It is assumed that no additional science team members will be deploying until notified otherwise.

ACTION ITEM 4: Arnold Gordon will provide further personal details (date of birth, etc.) to Karl Newyear for individuals named in SIP. A list of persons lacking information was provided by Karl to Arnold. This information is needed to begin PQ process.

RESPONSE 4: This action item has been completed. All cruise participants PQing via the USAP have received a medical kit and many are already PQed.

- Foreign Citizen Participation: Two Italians, one German, and one New Zealander will participate in AnSlope I. It is possible that two Americans will sail a cruise on the *Italica* as a result of this collaboration. Please see attached sheet for details on various personnel movement plans. It is the PI's and participant's decision on whether to PQ via the USAP or via their own national Antarctic programs.

ACTION ITEM 5: AnSlope PIs will consult with foreign participants in their groups to determine how to PQ and deployment/redeployment needs, and to determine deployment/redeployment needs of US participants on *Italica* cruise as noted on attached sheet. Information will be forwarded to Karl Newyear who will make necessary arrangements with RPSC Travel and Logistics (i.e. MCM) personnel.

RESPONSE 5: This information has been provided to Karl, and relevant MCM personnel have been included in the discussions. Attached is a summary of AnSlope/CLIMA personnel logistics. The USAP will provide other foreign participants with round-trip travel between the US and MCM Station as appropriate, the same as for US-based researchers. Travel arrangements between their residence and the US is the responsibility of the AnSlope PIs and not the USAP.

ACTION ITEM 6: AnSlope PIs will determine if foreign participants will require ECW from USAP or their home nation's Antarctic program. AnSlope PIs will determine if US participants in *Italica* cruise require ECW from USAP. Information will be forwarded to Karl who will make necessary arrangements. All USAP-issued ECW must be returned after use.

RESPONSE 6: Karl Newyear, Bruce Huber, and others have figured out logistics for foreign participation. Please see attached file for general plans.

- Both science party members and RPSC staff will deploy to MCM via CHC. The CHC-MCM military flight imposes restrictions on volume/weight of luggage and personal gear that may be brought to the NBP. Certain items of ECW are required to be worn during the CHC-MCM flight and do not count against your weight limits.

ACTION ITEM 7: Karl will clarify what items may be carried on your person (as opposed to palletized "checked" luggage) for use during the CHC-MCM flight including laptop computers, cameras, etc. Karl will confirm that people can use their own luggage (subject to weight restrictions) and do not need to fit everything into the two orange issue bags. Karl will clarify what ECW issue from the CDC can be rejected. Information will be forwarded to AnSlope PIs.

RESPONSE 7: ECW clothing that must be on your person for the CHC-MCM flight includes the following items: balaclava, pile knit hat, or yazoo cap; bunny boots or blue FDX boots; furbank gauntlets, wool mittens or gloves; red down parka or Carhartt parka; polar fleece jacket; sunglasses; bib wind pants with liner, field trousers with liner, or Carhartt bib overall; thermal underwear (tops and bottoms); wool socks. Any other items may be declined. (NOTE: this list differs slightly from that on page 45 of the 2000-2002 Participant's Guide). You are permitted to have one carry-on item not to exceed the dimensions of 24"x15"x9"; contents are not restricted beyond normal prohibitions against carrying dangerous goods. You may use your own luggage, the orange bags issued with ECW, or a combination of both to carry personal and business effects to McMurdo. The weight limit for "checked" baggage (as opposed to your one carry on item) is 34 kg. If you expect to exceed this weight limit, please contact Karl for an Excess Baggage Request Form.

ACTION ITEM 8: RPSC will investigate what ECW items can be borrowed from the clothing stocks in the Punta Arenas warehouse. These items will be unloaded to the NBP in Punta Arenas to be available for use on AnSlope I and will not count toward luggage weight limits for CHC-MCM flight. Information will be forwarded to AnSlope PIs.

RESPONSE 8: At the conclusion of GLOBEC, prior to the NBP's departure from Punta Arenas for its hazardous waste run to the US it was not possible to borrow ECW items from the warehouse. All ECW items will be issued through the CDC in CHC.

Cargo

- RPSC will procure one 20' open top container and one standard 20' closed container. They will be delivered to OSU to be packed with mooring equipment. Someone from HUE will fly to OSU to oversee container packing. Jay Simpkins will fly to HUE to oversee unload of the containers and/or to inspect the NBP regarding deck and lab layout.
- Glass ball floats with hard hats and possibly the HPU and/or traction winch will be packed in the open top container. All other mooring gear will be packed in the closed container.
- It is likely that 3 each wooden boxes, approximately 4'x4'x4' will be unloaded to the NBP while in HUE in November 2002.
- Mooring anchors will be sent to HUE as breakbulk. HUE will package them appropriately for southbound shipment.
- Containers and anchors will be sent to MCM on the Green Wave (American Tern) cargo vessel. They will be unloaded to the NBP during the 20-25 February 2003 port call.

NOTE: Containers and other cargo were unloaded to the NBP at HUE. Anchors will be delivered to MCM via the American Tern and unloaded to the NBP while the ice pier is still available at the beginning of the pre-AnSlope port call.

- Empty containers will be stored in CHC after AnSlope I.
- Logistics of getting containers back onto NBP for AnSlope III mooring recovery will be decided after AnSlope I in consultation with RPSC Logistics personnel.
- Scientific instruments and major hardware will be repacked into closed container during AnSlope III and must return to home institution in 2004. Glass ball floats will be re-packed in open top container during AnSlope III and can remain in NZ until the northbound Green Wave (American Tern) trip in 2005.

ACTION ITEM 9: Jay Simpkins will provide approximate weights for the mooring containers and “Do Not Freeze” boxes of instruments to Karl Newyear. Karl will check the weight limits for containers going on the Green Wave (American Tern).

RESPONSE 9: Jay has forwarded this information to Karl. No further action is required. The containers are currently on the NBP and will remain there through AnSlope I. HUE personnel are responsible for packing the mooring anchors in compliance with any weight limits the Tern may be subject to.

ACTION ITEM 10: Karl Newyear will check with Laurie Padman regarding the volume and weight of the microstructure instrumentation to be used on the cruise.

RESPONSE 10: Laurie has forwarded this information to Karl. No further action is required. Some components of CMiPS were left on board the NBP at the conclusion of GLOBEC. The sensor package was sent to RGL Consulting where it is currently being upgraded and recalibrated. This portion of the system will be sent via COMAIR and military flight to MCM to meet the NBP there. Additional batteries have been purchased by RPSC and will be available for AnSlope I.

ACTION ITEM 11: Bruce Huber will provide Karl Newyear with information on the volume and weight of cargo originating at LDEO (CFC system, etc.)

RESPONSE 11: Bruce and Eugene Gorman have forwarded this information to Karl. No further action is required. This equipment was sent to HUE and unloaded to the NBP there in early November.

ACTION ITEM 12: Karl Newyear will investigate the possibility of LDEO cargo being retrograded directly to New York, bypassing HUE. Bruce Huber will provide further details of this request to Karl.

RESPONSE 12: This item is still pending.

ISSUE: AnSlope PIs must inform Karl whether shipment of water samples for CFC analysis at their home institution are expected. Transshipment of such samples, whether preserved, treated, or unadulterated and whether being offloaded from the NBP in MCM or LYT requires a permit from the NZ Ministry of Agriculture and Forestry. Karl can provide the appropriate applications.

NBP Lab and Deck Issues

- A gas chromatograph containing a sealed source of radioisotope (^{63}Ni) will be used for CFC analysis. Proper clearances for entry of this item into NZ will be obtained through normal rad use permit process. RPSC will send PI instructions on how to proceed.
Plan A: onload GC to NBP in HUE and it remains on board until the end of AnSlope I.
Plan B: send the GC to CHC and onload it to NBP in LYT. It remains on board until the end of AnSlope I.

ACTION ITEM 13: AnSlope PIs will inform Karl what is to be done with the GC between AnSlope I and II. Storage on the NBP is likely to be easier than offloading in NZ.

RESPONSE 13: The GCs were unloaded to the NBP in HUE, are currently on board, and will remain on the NBP until the end of AnSlope III when they will be retrograded to LDEO. The Christchurch USAP office has received a NZ Radioisotope Import Permit. This will allow the

GCs to enter NZ on the NBP and be offloaded for servicing in NZ if necessary. An export permit allowing transshipment to the US at the end of their use (post AnSlope III) will be obtained later. Karl received a copy of the Import permit during the NBP's port call in LYT in early December.

NOTE: Please advise Karl if it will be necessary to offload the GCs and/or other CFC equipment at the end of AnSlope II. Such items will be shipped as retrograde cargo out of MCM. If possible, RPSC recommends retrograde after AnSlope III so that items do not need to be flown between MCM and CHC.

- Grantees will provide cylinders of standard gas for CFC work. These will be shipped to HUE and unloaded to NBP there.

- Nitrogen to be provided by RPSC should be the same purity as that used on NBP 00-8.

NOTE: Grantee-provided cylinders of standard gasses were received at HUE and unloaded to the NBP there. 21 cylinders of bone dry (99.8%) liquid CO₂, 2 cylinders of propane, and 2 cylinders of oxygen along with appropriate regulators and a torch assembly were received on the NBP in LYT during the 6-11 December port call. 13 each US-type cylinders of UHP (99.999%) nitrogen will be provided by McMurdo and unloaded during one of the NBP's port calls there prior to AnSlope I. AnSlope PIs will provide CFC-free regulators for the nitrogen cylinders.

- Approximately 150 full-depth CTD casts are expected, with about 2400 samples drawn for each of oxygen analysis and bottle salinity measurements. Grantees will run these samples. RPSC will provide instrumentation and dispose of haz waste.

NOTE: Karl sent Bruce a set of O-rings and petcocks taken from the NBP rosette so that AnSlope PIs can provide baked O-rings of the proper size to satisfy CFC sampling protocols.

NOTE: As of this writing there is discussion among NSF, RPSC, and the USCG regarding the lending of the NBP's backup CTD system to the USCG for completion of Walker O. Smith's project in early February. The dates do not directly conflict with AnSlope, but there are other logistical and security concerns to be addressed. Karl will keep all parties informed of how this proceeds.

- AnSlope PIs request at least 96 each flasks for oxygen sampling and at least 150 each bottles for salts. RPSC will check stocks and order new bottles as necessary.

NOTE: The NBP currently has 43 each oxygen flasks, 168 each square salts bottles, and 101 each round salts bottles. RPSC has ordered 24 additional oxygen flasks, and AnSlope scientists shipped 96 flasks from LDEO which were unloaded to the NBP in HUE.

- No aquarium tanks are needed on the starboard side of Aquarium Room. This space will be left open.

NOTE: The 21 cylinders of liquid CO₂ noted above are currently stored along the starboard bulkhead of the aquarium room. CFR and USCG regulations limit where these cylinders may be stored, and they are being monitored for leaks. No Xactic aquarium tanks are currently aboard the NBP.

- A new Main Crane with a lifting capacity of 50,000 lbs. will be added to NBP prior to AnSlope I. The current main crane will remain in place.

NOTE: This project has been completed and the new main crane is fully operational.

- All fencing around the helo deck will be hinged to allow for vertical or horizontal placement.
- AnSlope PIs recommend conducting a few CTD casts to exercise the system between GLOBEC IV and NBP 02-9. The ship will cross the Equator twice during this time and system performance may degrade if not checked. It is recommended to recalibrate all sensors and to pack the rosette away to keep it clean.

NOTE: Stan Jacobs planned to conduct necessary test casts of the CTD during NBP 02-9. This cruise recently finished at MCM and a cruise report from Stan is expected soon.

- General lab usage will be as follows:
 - Forward Dry Lab – CTD, XBT, ADCP, multibeam, and DAS system operations
 - Aft Dry Lab – mooring instrument staging, LADCP servicing, microstructure instrument staging, He/T gear storage
 - Baltic Room – CTD sampling
 - Wet Lab – staging for mooring
 - Aquarium Room – mooring instrument staging, CO₂ cylinder storage
 - Hydro Lab – CFC analysis
 - Bio Lab – oxygen titrations, salinity analysis
 - Coolers – walk-in coolers will not be used but are available if necessary

ACTION ITEM 14: Karl Newyear will ensure that RPSC provides full oxygen titration system hardware including spares. Karl Newyear will check whether RPSC has received new dissolved oxygen sensors for CTD system. AnSlope PIs will be informed of the findings.

RESPONSE 14: Karl confirms that new dissolved oxygen sensors for the CTD system have been received and are available for use. Karl still needs to verify that Langdon-type potentiometric oxygen systems are on board and functional.

ACTION ITEM 15: Karl Newyear will provide digital photos of the Aft Dry Lab to Jay Simpkins after the shipyard period to allow him to better plan mooring operations.

RESPONSE 15: This action item is unnecessary because Jay saw the Aft Dry Lab first-hand during the NBP port call in HUE after the shipyard period was completed.

ACTION ITEM 16: RPSC will look into purchasing an XBT autolauncher. Karl will review compatibility of autolauncher with various types of XBTs.

RESPONSE 16: RPSC is unable to provide an XBT autolauncher for the NBP because of the cost involved (~\$40k) and the difficulty of installation which requires a concentrated effort such as a shipyard period and not just a port call. XBTs and XCTDs will be deployed using the hand launcher during AnSlope.

ACTION ITEM 17: Karl Newyear will investigate whether deck sockets will be installed on the helo deck and in the helo hangar of the NBP.

RESPONSE 17: No additional deck sockets will be installed on the NBP. Deck sockets with a 2' center-to-center spacing are available over most of the main deck and portions of the helo deck. No deck sockets are available in the helo hangar. Peck-and-hale sockets for placement of

20' containers are located on the main deck and helo deck, though it's possible to also place containers inside the helo hangar without using peck-and-hales.

ACTION ITEM 18: Karl Newyear will forward information regarding real-time SeaWiFS permits to Arnold Gordon.

RESPONSE 18: Information on obtaining a real-time permit for SeaWiFS imagery is available at <http://seawifs.gsfc.nasa.gov/SEAWIFS/LICENSE/checklist.html>. The NBP TeraScan system is capable of receiving this type of imagery.

Mooring hydraulics

Plan A: NBP supplies electric power as necessary to OSU-provided HPU. HPU powers traction winch for mooring deployments/recoveries. Line is staged on reels.

Plan B: If OSU-provided HPU fails or is not used, NBP can provide hydraulic power to traction winch from lines on main deck.

Plan C: If OSU-provided winch fails, NBP will have seismic gun winch and seismic streamer winch available. These winches will be on board anyway, from use on previous MG&G cruises. If either of these winches needs to be used then the gun bundle or streamer will need to be unspooled and stored as appropriate.

- RPSC recommends Plan B to avoid use of high voltage/amperage electricity on deck in possibly very wet conditions. Standard seismic winch operation on NBP includes power provided by deck hydraulics.

ACTION ITEM 19: Jay Simpkins will provide Karl with information on the hydraulic fittings for the traction winch including line diameter, thread size, and gender for quick-connect fittings and the feed lines themselves in case the quick-connect fittings must be removed. Karl will ensure that proper fittings are available on the NBP.

RESPONSE 19: All parties have agreed that Plan B above is preferable. Plan A will be the first backup plan. Jay has forwarded the necessary documentation to Karl. There was insufficient time during the NBP's port call in LYT in early December to plumb and test the winch. However, all fittings, hoses, and other parts are on board and available for setup during the pre-AnSlope port call at MCM.

- None of the three plans for mooring winch hydraulics presents difficulties for NBP systems or capabilities (as per conversation with Jay Ar dai on 28 June 2002). Exact placement of winch and HPU was left undetermined. Final decisions will be made during the MCM port call. Some considerations:
 - If Plan A is used, RPSC might need to make electrical pigtails.
 - If Plan B is used, AnSlope grantees and RPSC must ensure proper fittings are available.
- NBP deck hydraulic system provides approximately 2250 psi but may be lower when system is cold. This is less than ideal for the OSU winch according to information provided by Jay Simpkins. The NBP can provide more than 25 gpm at this pressure, but the flow rate is adjustable.
- It is not anticipated that there are any incompatibilities in hydraulic fluid between the NBP deck hydraulic system and the grantee-provided traction winch.
- NBP deck hydraulics are designed for closed center, open loop winches. If OSU winch is open center then we can install a valve and either the OSU winch or other deck hydraulics

may be used at once. If OSU winch is closed center then no additional preparations are needed and multiple hydraulic systems may be used simultaneously.

ACTION ITEM 20: Jay Simpkins will provide information on winch design (open center, closed center, closed loop) to Karl Newyear to ensure proper compatibility with NBP deck hydraulics.

RESPONSE 20: Jay has forwarded documentation to Karl; the winch is “closed center, open loop.” There was insufficient time during the NBP’s port call in LYT in early December to plumb and test the winch. However, all fittings, hoses, and other parts are on board and available for setup during the pre-AnSlope port call at MCM.

ACTION ITEM 21: Jay Simpkins will provide footprint diagram for HPU and traction winch to assist with decision on placement on the deck. It is possible that deck plates will need to be used if the equipment does not have a 2’ bolt pattern.

RESPONSE 21: Jay has forwarded documentation to Karl. The final decision on winch placement will occur during the pre-AnSlope port call in McMurdo.

Mooring Operations

- Instruments include 29 ea. Anderaa current meters, 20 each MicroCats, 1 SeaCat pressure gauge, 1 ea. upward looking SonTek ADCP. There will be 11 moorings, but only 9 will be recovered and redeployed on AnSlope I.

NOTE: It is still undetermined whether only 9 or all 11 moorings will be recovered and redeployed. The grantees have provided sufficient anchors to accommodate all possibilities.

NOTE: RPSC will provide 3 each MicroCats and associated hardware for an additional mooring. All have mounting brackets permitting placement on 5/8” rods or line. AnSlope PIs are expected to provide anchors, line, and floats necessary for this additional mooring.

- RPSC can provide 8 ea. 17” glass ball floats as backup for grantee-provided gear.
- Grantees have already procured mooring anchors, so RPSC will not provide these.
- 3/8” Samson braid rope will be used on moorings. Breaking strength is approx. 7200 lbs.
- Grantees will provide HPU (440 V, 3 phase), traction winch, spooler, reel stand, deck cleats, turning lines, sheave, quick releases, grappling hooks, instruments. RPSC will provide large sheave (capable of 1500 lb. load), chain and binders for anchors, tugger winches, electric/hydraulic power, extra hydraulic lines, fittings, hoses, connectors, and regulators
- Instruments will have battery power for 30 months at initial deployment so that data is not lost if recovery is not possible at the end of AnSlope I or AnSlope III.
- All moorings are single-release.
- Recovery will be conducted during daylight hours only because moorings do not have radio beacons, strobe lights, or other means of location.
- NBP should be prepared to drag for moorings that don’t release properly. 9/16” wire rope currently on trawl winch should be sufficient. Drag hooks might need to be fabricated.

- Grantees are providing deck release boxes.

ACTION ITEM 22: RPSC will investigate the possibility of adapting their Benthos deck boxes to communicate with Edgetech releases. RPSC will investigate the possibility of hooking Benthos deck release through hull-mounted transducers to communicate with Edgetech BACS

8202 and 8242XS releases. RPSC will investigate possibility of plugging Edgetech deck release (8011A) to hull-mounted transducer. Karl Newyear will inform AnSlope PIs of results.

RESPONSE 22: This issue is still being investigated. Communications between EdgeTech, RPSC, and the grantees are ongoing.

ACTION ITEM 23: Stan Jacobs will obtain information regarding the expected keel depth for icebergs B-16 and C-19 and forward it to Jay Simpkins. This might affect mooring design and placement of weak links.

RESPONSE 23: Stan Jacobs provided information from Don Blankenship. Nominal keel depth is estimated at 266 meters. All parties involved in AnSlope continue to monitor the location of iceberg C-19 which is now located in the northern Ross Sea. It is reported that access to McMurdo Sound requires passing to the east of iceberg C-19.

Multibeam Survey / NBP 02-9

- Discussions are ongoing between RPSC, Joann Stock, Steve Cande, and Stan Jacobs regarding collaboration on cruise NBP 02-9 to conduct a multibeam survey of the AnSlope study area. It is up to the PIs involved to decide how the science time should be allotted to the various activities.
- As per conference call on 3 July 2002 involving RPSC, Joann Stock, Steve Cande, and Stan Jacobs 4 extra days have been added to cruise NBP 02-9. These days were taken from port calls at either end of the cruise and no other cruise date changes were necessary.
- A cruise planning meeting for NBP 02-9 will likely be held in August 2002. Jim Holik at RPSC will organize this meeting since Karl Newyear, the POC for both Stock/Cande and AnSlope will be at sea from late July to late September 2002.

NOTE: A meeting was held at CalTech in mid-October 2002. Stan Jacobs participated via teleconference. A separate document of notes was compiled by Karl and is available upon request. Cruise NBP 02-9 finished on 2 January at MCM. A cruise report from Stan Jacobs on the AnSlope site survey and test cast(s) of the CTD are expected to be forthcoming soon.

PERSONNEL MOVEMENTS

Please see "Personnel" section above for details on ECW for these persons.

SPECIAL NOTE: The plans, questions, and action items from the original AnSlope Meeting Notes have been superceded by the attached plan, dated 3 January 2003 and formulated by Karl and Bruce with collaboration of the others involved.

AnSlope/CLIMA Travel Plans 3 January 2003

- 1 Jan 03 Guerrero departs Mar del Plata, Argentina.
- 4 Jan 03 Guerrero receives USAP ECW
- 5 Jan 03 Bergamasco, Guerrero embark *Italica* in LYT
Italica departs LYT
- 8 Jan 03 Spezie departs Italy
- 9 Jan 03 Spezie arrives CHC, receives Italian ECW
- 10 Jan 03 CHC-MCM via USAP C-141 for Spezie
- 11 Jan 03 MCM-TNB via Italian helo or Twin Otter for Spezie
- 15 Jan 03 Spezie embarks *Italica* at TNB
- 16 Feb 03 USAP ECW issue for Newyear, Coward, Huggins, *Huckins?*
- 17 Feb 03 CHC-MCM via USAP C-141 for Newyear, Coward, Huggins, *Huckins?*
- 18 Feb 03 USAP ECW issue for Felix, Martin, Tudor, Boda, Brooksforce, Gavahan, Huber,
Guy Mathieu, Sally Mathieu, Mele, Simpkins, Stone
- 19 Feb 03 CHC-MCM via USAP C-141 for Felix, Martin, Tudor, Boda, Brooksforce,
Gavahan, Huber, Guy Mathieu, Sally Mathieu, Mele, Simpkins, Stone
- 20 Feb 03 *Italica*-TNB via Italian helo for Guerrero, Spezie, Bergamasco
TNB-MCM via Italian helo for Guerrero, Spezie, Bergamasco
USAP ECW issue for Assmann, Bratcher, Curchister, Dachille, Gordon, McKay,
Orsi, Padman, Stanton, Zambianchi
- 21 Feb 03 CHC-MCM via USAP C-141 for Assmann, Bratcher, Curchister, Dachille,
Gordon, McKay, Orsi, Padman, Stanton, Zambianchi
MCM-CHC via USAP C-141 for Spezie, Guerrero
Bergamasco embarks NBP with other AnSlope I grantees
- 23 Feb 03 *Italica* arrives TNB
- 3 Mar 03 Guerrero departs CHC for return to Mar del Plata, Argentina.
- 11 April 03 NBP arrives LYT at end of AnSlope I
- 12 April 03 All AnSlope pax, incl. Bergamasco, Zambianchi disembark NBP.

NOTES:

- Guerrero will PQ via the USAP (per email from Bernie Lettau, 17 Oct 02). Guerrero is PQing via Italian program (per email from Raul Guerrero 22 Oct 02).

NOTE: Raul PQed in Argentina and received clearance from the Italian program per email from Dr. Catalano of ENEA on 29 October 2002.

- Guerrero's commercial travel from Mar del Plata to CHC and back to be provided by USAP (per email from Bernie Lettau, 17 Oct 02).
- Guerrero has already made a reservation with Aerolineas Argentinas for 1 Jan 03. It is requested that RPSC use this reservation when issuing commercial airline tickets. See email from Raul Guerrero, 21 Oct 02 for details.
- Guerrero requests ECW from the USAP (per email 22 Oct 02).
- Spezie will PQ via the Italian program (per email from Bernie Lettau, 17 Oct 02).
- Spezie's travel from home to CHC and back will be provided by Italian program (per email from Enrico Zambianchi, 11 Oct 02).
- Spezie's CHC-MCM and MCM-CHC flights authorized as a "self-ticketing foreign participant, PQed by the Italian program" by Bernie Lettau, 23 Oct 02
- Bergamasco and Zambianchi's commercial travel from Italy to CHC and back to be provided by Italian program (per email from Bruce Huber, 24 Oct 02)
- All return travel except Bergamasco, Zambianchi, Stanton arranged with USAP via MPC prior to end of cruise. Bergamasco, Zambianchi travel arranged via Italian program. Stanton travel arranged locally.
- Karen Assmann will PQ via German Antarctic Program. All other support provided by USAP.

NOTE: Karen PQed via the USAP and is cleared through AnSlope I.

- Basil Stanton has PQed via USAP. He will receive USAP ECW. No travel between home and CHC will be provided by USAP, but CHC-MCM flight will be.
- Verification of foreign PQ should be sent to Harry Mahar (hmahar@nsf.gov). USAP requires no test results to be submitted, but participants PQing via a foreign program are requested to bring sealed copies of their medical paperwork (and English translation if possible) with them to the NBP.
- USAP issuance of ECW to foreign participants authorized by email from Al Sutherland, 23 Oct 02. Substantially equivalent foreign ECW is acceptable to wear on USAP C-141 flights.

QUESTIONS:

- Will Bergamasco require ECW from USAP? Karl can provide "Personal Information" forms to anyone needing ECW. An electronic version is not available, but they can be FedExed if proper addresses are provided to Karl.

- Will Bergamasco PQ via the USAP? If so, has he received his kit yet?
- When will RPSC personnel and AnSlope grantees embark onto the NBP during MCM port call?

NOTE: RPSC personnel and AnSlope grantees will embark onto the NBP on 21 February 2003. Disembarking personnel from previous the previous cruise will depart the NBP on that date also.