PALMER AREA USERS COMMITTEE (PAUC) MEETING

July 16, 2003
Denver, Colorado

PALMER AREA USERS COMMITTEE MEETING 16 July, 2003

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Executive Summary

The annual Palmer Area Users Committee (PAUC) took place 16 July 2003 in Centennial, Colorado at the Raytheon Polar Services Company (RPSC) headquarters. The meeting was opened by RPSC in the absence of Wade Jeffrey, Chair, whose arrival was delayed until mid-morning due to bad weather and flight cancellations.

RPSC presentations and Committee discussions covered topics concerning the operation and long-term plans for Palmer Station. After introductory remarks by RPSC and the NSF, it was reported that 12 of 15 recommendations from the previous meeting had been completed or showed significant progress. The other three were addressed in the current meeting.

RPSC Information Technology presented updates on the web portal, network security, and POLAR ICE to the Committee. FEMC described progress on current projects and future plans, most significantly improvements to the Lab remodel, upgrades of the Environmental Rooms, and plans for the new CTBT/Science Technical Facility. Logistics reported on the progress of inventory reduction and Punta Arenas warehouse cleanup, as well as improvements in sample shipment procedures. Marine discussed the improvements in ship-station relations, the difficulties in creating the ship schedule and supporting the Peninsula Automated Weather Stations (AWS). Science Support (Field) presented information on upgrading outboard motors, a brash capable boat, and bathymetric survey requirements. Science Support (Lab) covered storage issues, instrument procurement, and a potential aquarium monitoring system.

Committee discussions were wide-ranging, including aspects of the previous topics presented by RPSC, as well as long-term issues such as pier and seawater intake replacement, the importance of meteorology and bathymetry data, and participation in the National Ecological Observatory Network. The discussions resulted in nine Committee recommendations for follow-up.

The meeting closed with thanks to members for participating and particularly to the members completing their terms: Charles Amsler, Karen Baker, and Bruce Sidell.

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Agenda

Palmer Area Users' Committee
Annual Meeting, 16 July 2003
McMurdo Auditorium
Raytheon Polar Services Company, Centennial, Colorado

7:00 – 7:30 CONTINENTAL BREAKFAST

7:30 – 8:40 OPENING
- Introduction of attendees and overview of agenda (10 min)
- NSF welcome and remarks (20 min)
- RPSC welcome and remarks (20 min)
- PAUC review of 2002 recommendations (20 min)

8:40 – 9:45 IT/COMMUNICATIONS
- New USAP Web portal (15 min)
- Network security (15 min)
- POLARICE (15 min)
- Discussion of IT issues (20 min)

BREAK (15 min)

10:00 – 11:30 FACILITIES/OPERATIONS
- Facilities overview (10 min)
- Pier/Seawater Intake/Aquarium (10 min)
- CTBT/Science Technical Building (10 min)
- Labs/Cold rooms (30 min)
- Quality of life/Recreation (10 min)
- Discussion (20 min)

BREAK FOR LUNCH (30 min)

12:00 –12:40 LOGISTICS/TRAVEL
- Warehouse cleanup (10 min)
- Grantee cargo to station (10 min)
- Sample shipments (10 min)
- Discussion/Travel questions (10 min)

12:40 – 13:30 MARINE
- Ship/Station relations (15 min)
- LMG scheduling (15 min)
- AWS servicing (10 min)
- Discussion (10 min)

BREAK (15 min)

13:45 – 15:15 SCIENCE SUPPORT
- Boating: outboard motor replacement (15 min)
- Palmer area bathymetry data (15 min)
- On-site science storage (15 min)
- Science equipment procurement (15 min)
- Aquarium monitoring system (10 min)
- Palmer baseline data collection/NEON discussion (20 min)

15:15 – 15:30 PAUC BUSINESS
- Acceptance of 2002 Minutes
- Membership review/Nominations for new members
- New business

BREAK (15 min)

15:45 – 17:00 OPEN DISCUSSION AND MEETING WRAP-UP

Recommendations

Recommendation 1: RPSC should continue to keep PAUC informed as Facilities projects progress, specifically the Environmental Room upgrades.

Recommendation 2: Landgon Quetin (PAUC) and Rob Edwards (RPSC) will work on a plan to collect water quality data in an effort to determine where the seawater intake system should be placed. Langdon will provide water intake information to LTER for their review/comments.

Recommendation 3: RPSC will investigate book club options as a way of improving Palmer Station reading materials.

Recommendation 4: Rebecca Shoop (RPSC) will work with AGUNSA to ensure the "meet and greet" staff in Punta Arenas is conversant in English. This will alleviate problems that might arise at the airport with, for example, checking excess baggage, airline ticket changes, etc.

Recommendation 5: RPSC (Marine Superintendent) will discuss ship schedule changes with those principal investigators who are affected. Explanation of why/how schedules are changing may be by email or teleconference- but should occur as soon as a change is known.

Recommendation 6: RPSC will update email/phone list and distribute regularly.

Recommendation 7: RPSC will deliver one of the newly purchased 40HP outboard motors to Palmer Station for evaluation.

Recommendation 8: Rob Edwards (RPSC) will prepare a document in support of $75K expenditure for Palmer Station Bathy data for consideration by NSF. PAUC will provide additional justification for the survey.

Recommendation 9: Wade Jeffrey will review emails he's received from grantees for equipment items and forward the list to Rob Edwards (RPSC) for prioritization and consideration when preparing the next budget. RPSC will provide a list of existing equipment for PAUC review.

Welcome, Introductions, Overview

Due to Chair Wade Jeffrey's flight delay, Rob Edwards opened the meeting. Following round table introductions and review of the meeting agenda, Steve Dunbar began by stating that the meeting is planned to be more interactive than in the past. There will be fewer formal presentations from the various divisions. It is hoped that through this approach and new format, RPSC and the NSF might elicit more discussion from the grantees, resulting in a more productive meeting than in the prior years' two-day sessions.

RPSC Update

Steve continued with the RPSC update and reported that in an effort to integrate Denver in-house functions more closely with Palmer Station operations, Rob Edwards and Cara Sucher now report to Bob Farrell, Operations Manager, instead of Science Support.

Other Noteworthy Items

Due to extreme sea ice conditions last season, two icebreakers were required to break ice at McMurdo. This, along with increased tanker fees, negatively impacted the budget. In addition, some individual projects were more expensive than in the past. These unanticipated costs have made it difficult to work within the unchanged budget.

RPSC is attempting to reduce on-the-shelf inventory items to make our operation more cost effective.

Major Planned Projects

Helo-supported Beardmore camp, West Antarctica- ice coring to bedrock; an 8-10 meter telescope installation at South Pole; Ice Cube project at South Pole.

The newly created Science Planning Group is doing an excellent job of analyzing projects, coordinating and working with principal investigators, and in apprising the NSF of project development.

The Palmer Earth Station is progressing well, per Bob Farrell's recent visit to Palmer Station.

PAUC Review of Recommendations 2002

Rob Edwards recapped the July 11-12, 2002 Actions/Recommendations
And status of each.

RECOMMENDATION 1: PAUC (WADE JEFFREY) WILL SUBMIT A LETTER IN SUPPORT OF OBTAINING A PALMER STATION AREA COASTAL RESEARCH VESSEL TO RPSC (ROB EDWARDS/STEVE DUNBAR) FOR FURTHER SUBMISSION TO THE (NSF) DR. KARL ERB. ***Deferred until Wade Jeffrey arrives***

RECOMMENDATION 2: RPSC (STEVE DUNBAR/JIM HOLIK) WILL REVIEW AND, WITH INPUT AND SUGGESTIONS FROM THE PAUC, WILL CLARIFY THE CURRENT BERTHING VAN GUIDELINES FOR THE VESSELS TO IMPROVE HOW/WHO IS ASSIGNED BERTHING VAN ACCOMODATIONS. ***Done. Steve Dunbar/Jim Holik refined berthing guidelines.***

RECOMMENDATION 3: PAUC RECOMMENDS THAT RPSC INVESTIGATE THE POSSIBLE ACQUISITON OF A BRASH CAPABLE BOAT. ***Randy Sliester will join the meeting to discuss later.***

RECOMMENDATION 4: TRAVEL/LOGISTICS DEPARTMENTS (KELLY NEVINS/KEN NAVARRO) WILL CONTINUE TO WORK WITH AIRLINES TO EDUCATE AIRLINE RESOURCES/CONTACTS IN AN EFFORT TO IMPROVE MOVEMENT OF SPECIAL CARGO SHIPMENTS. USEFUL AIRLINE CONTACT NUMBERS WILL BE PASSED ALONG TO GRANTEES TO HELP WITH THEIR PRE-PLANNING AND SHIPPING. ***Done. Travel Department continually works to improve communication with airlines and grantees.***

RECOMMENDATION 5: RPSC (ROB EDWARDS) WILL INQUIRE OF PALMER AREA GRANTEES/SCIENTISTS INFORMATION REGARDING HISTORICAL NAMES OF AREAS (SHOALS/ROCK SITES/ETC) AROUND PALMER STATION FOR USE IN A MORE COMPLETE GIS MAP. ***Done. The most updated version of the boating map will be made available to grantees.***

RECOMMENDATION 6: RPSC (ROB EDWARDS) WILL DRAFT AN AMENDMENT TO THE BOATING REGULATIONS DOCUMENT THAT BETTER IDENTIFIES THE ULTIMATE AUTHORITY FOR SPECIAL CIRCUMSTANCE BOATING ISSUES. ***Done by Committee and distributed.***

RECOMMENDATION 7: PAUC WILL REVIEW THE *RECOMMENDATIONS FOR PALMER STATION AQUARIUM AND SEAWATER SYSTEM UPGRADE* REPORT AND PRIORITIZE AQUARIUM AND SEA WATER SYSTEM IMPROVEMENTS/ SUGGESTONS FOR RPSC/NSF CONSIDERATION. ***Done. Chuck Amsler headed sub-committee. Report is available from Rob Edwards or Chuck Amsler.***

RECOMMENDATION 8: A WORKING GROUP (MARIA VERNET/ALISON MURRAY) WILL PROVIDE INFORMATION TO ASSIST RPSC IN REPAIRING/IMPROVING THE COLD ROOM/ENVIRONMENTAL SPACE. RPSC WILL REVIEW COLD ROOM/ENVIRONMENTAL CAPABILITIES AND PROVIDE SPECS/STANDARDS TO FEMC SO THEY MAY DETERMINE HOW BEST TO MEET THE WORKING GROUP'S CRITEREA DURING CONSTRUCTION/REMODELING EFFORTS. ***Done. Alison Murray and Maria Vernet worked with and will continue to work with Jessie McGill, FEMC.***

RECOMMENDATION 9: PAUC AND OTHER PALMER AREA USERSARE ASKED TO REVIEW THE RPSC (KEN NAVARRO) INVENTORY SPREADSHEETS AND ADVISE KEN OF ANY ITEMS THAT MAY BE CONSIDERED FOR RETROGRADE OR DISPOSAL. TENTATIVE PLANS ARE TO RETRO ITEMS BACK TO THE U.S. ALONG WITH ITEMS FROM PALMER STATION IN JANUARY 03. ***On-going. Ken Navarro will continue to work on items that may be cleared from inventory.***

RECOMMENDATION 10: PAUC ASKED THAT NSF (HARRY MAHAR) CONTINUE TO KEEP PAUC INFORMED REGARDING HOW INTERNATIONAL PARTICIPANTS ARE PHYSICALLY QUALIFIED AND APPROVED FOR TRAVEL THROUGH THE USAP. ***This has been resolved and policy was distributed to grantees with foreign participants.***

RECOMMENDATION 11: RPSC (ROB EDWARDS) WILL PROVIDE PAUC WITH CURRENT DIRECTORY (TELEPHONE CONTACT NUMBERS) AND ROB WILL REVIEW THE PAUC AND PALMER AREA USERS' DISTRIBUTION LISTS TO ASSURE ALL CURRENT MEMBERS ARE LISTED. ***Done. Rob Edwards sent out new directory and user list.***

RECOMMENDATION 12: RPSC (ROB EDWARDS) WILL PROVIDE PAUC (KAREN BAKER) AND OTHER INTERESTED USERS WITH PALMOS METEOROLOGICAL DATA FOR COMPARISON WITH SYNOPTIC OBSERVATIONS. MARIA VERNET WILL INVESTIGATE OPTIONS FOR LONG TERM COLLECTION OF SEAWATER PARAMETERS AND WILL REPORT TO PAUC (WADE JEFFREY) FOR FURTHER RECOMMENDATION TO RPSC AND THE NSF. ***Kathie Hill, Meteorologist, has been hired as POC for Met Data collection throughout the program and has a preliminary report.***

RECOMMENDATION 13: RPSC (ROB EDWARDS) WILL INVESTIGATE COSTS AND FUNDING FOR A BATHYMETRIC SURVEY OF THE PALMER STATION BOATING AREA, TO INCLUDE DEPTH AND BOTTOM CHARACTERIZATION, TO BE PERFORMED DURING THE 02-03 SEASON IF POSSIBLE. ***Deferred. Rob Edwards has handouts and this will discussed later.***

RECOMMENDATION 14: PAUC (WADE JEFFREY) WILL SUBMIT A PRIORITIZED LIST OF CAPITAL EQIUPMENT REQUESTS TO RPSC (ROB EDWARDS) FOR POSSIBLE ACQUISITION AS FUNDS BECOME AVAILABLE. ***Wade Jeffrey will discuss. Steve Dunbar noted that RPSC is being asked to provide NSF with minimum requirements and costs to maintain or replace equipment.***

RECOMMENDATION 15: PAUC (WADE JEFFREY) WILL REVIEW AND PROVIDE TO RPSC (BOB FARRELL) A LIST OF BOTH SHORT AND LONG TERM PRIORITIES FOR THE FACILITIES FOR THE FACILITIES AND MANAGEMENT OF PALMER STATION. ***The pier is one of the biggest items from last year's list. Wade Jeffrey may have more input on this recommendation.***

IT/Communications

IT Web portal - Increased Security and Management

Mark Buckley, IT, reported on increased security and management of RPSC web sites. IT staff is making concentrated efforts to clean up website addresses; to determine how best to centrally manage these sites in a logical fashion; and to create a better environment to do outreach. Options may include a portal environment but with central management. On-line training and on-line work groups are being considered as a part of outreach efforts. Stage one- a face lift- is a transition from current web site to 'usap.gov'. While RPSC moves through stage one (anticipated go-live date of August 3, 2003), impact to the science community should be fairly minimal. However, site access should become easier, friendlier, and more effective.

Stage two will be primarily a rigorous roll out. RPSC IT will be contacting users to gather a range of requirements. For example, what do the scientists want to see, how can this technology be developed to help the scientist, what are the possible collaborations with your institutions, what types of web processes and services can RPSC work on to provide better service. From the information gathered, RPSC will recommend and develop priorities to present to the NSF direction for the FY05 budget cycle.

During stage two, RPSC will continue with normal IT business:

- Station intranets will be under general management by RPSC IT.
- Efforts will continue to "mirror" all three stations (Palmer, McMurdo, and South Pole).
- IT will manage the TV on the stations.

Pat Smith added that the NSF solicits communication from the scientists and, with the efforts of RPSC IT, support to the scientists will continue to improve.

IT Network Security

Tim Howard discussed network IT security and noted that "RPSC IT is here to assist you in doing science in a secure manner. We're not here to do security." If RPSC IT knows the scientists requirements early on, then appropriate systems can be up and ready to go when they arrive on station.

POLARICE

Scott Holbrook updated the committee on the POLARICE roll-out last season. Many positive responses have been received and, as POLARICE developers move forward, issues will be assigned a priority rating. Some of the changes evolving from this first year's roll-out include: participant page is no longer on the first page; field camp "legs" will be added to make deployments clearer for all; these field camp legs will drive the dates for lab, field, etc.; team movements will be tracked by date/locations, etc.; participant itinerary will be built up as the PI enters information into POLARICE.

Facilities/Operations Activities

Jesse McGill, FEMC, reported on facilities activities over the last season. With the new BioLab Ground Floor exhaust system developed this last season, the five existing fans will be replaced, tied into a Direct Digital Control (DDC) system, and will produce slower fan speeds and a more consistent temperature in the labs. This is an ongoing process and will be taking place before the scientists arrive. Changes can be made later, if needed. However, it is anticipated that these two main problems (noise and temperature) will be improved early in the summer season.

Other benefits to installing a DDC system for HVAC: better overall ventilation, improved fume hood function, uniform temperatures throughout the GWR, HVAC system does not have to operate continually to maintain desired results, and a computerized program to run heating in building.

Jessie reported on some of the projects for FY04 at Palmer Station:

- Design upgrade to BioLab men's third floor bathroom (Construction in Winter 05)
- Six additional doors will be replaced (either for fire protection or because of rusty condition)
- Conduct shore line and site survey.
- Design boat house ramp upgrade - for safety reasons.
- Seawater intake re-design.

Waste heat Glycol loop will be used to heat Trades Shop, Boathouse, and Aquarium instead of electric- thus saving power.

Environmental Room

The compressors will be relocated and new refrigeration units and controls will be installed. Due to the costs and budget constraints, this work is contingent on budget approval.

PAUC Recommendation 1: RPSC should continue to keep PAUC informed as Facilities projects progress, specifically the Environmental Room upgrades.

Seawater Intake

Regarding the seawater intake- maintenance procedures have been changed to help improve the system. While the new procedures increased the operation costs, it appears to keep the system functioning properly. Plans are to evaluate the previous studies from the 80's and 90's to produce an improved design. RPSC can then take this to the science community for input in determining where the intake needs to be. In FY05, the system will be replaced based on findings.

PAUC Recommendation 2: Landgon Quetin (PAUC) and Rob Edwards (RPSC) will work on a plan to collect water quality data in an effort to determine where the seawater intake system should be placed. Langdon will provide water intake information to LTER for their review/comments.

Palmer Station Pier

During FY04 a pier will be designed taking into consideration the size of vessels visiting Palmer Station, sea bottom, and shoreline. Only maintenance type repairs will be done in the interim in FY04.

CTBT/Science Technical Facility

In March 2003, the NSF requested alternate designs to reduce costs. In April, FEMC did a number of things to reduce costs. In June 2003, this was passed on to the Air Force. Construction will proceed according to the availability of Air Force funding. It will not be built Winter 2005 due to timing. Germar Bernhardt noted that his organization needs to know project timing ahead of construction so they can make plans to transition their instrument to the new building.

Quality of Life issues

Bob Farrell noted that quality of life has improved greatly at Palmer Station. TV might even be a consideration if the scientists wanted it. General consensus was that improved reading materials/library books would be more desirable than TV.

PAUC Recommendation 3: RPSC will investigate book club options as a way of improving Palmer Station reading materials.

A committee member suggested a second exercise treadmill. Bob Farrell will look into this- space may be an issue though.

Logistics/Travel

Rebecca Shoop reported that she and Ken Navarro did a cleanup in the Punta Arenas warehouse in June. Warehouse items were identified in Warehouse 2 and in the outside storage area. Sixty-seven pieces, totaling 30,000 lbs. were tagged as either obsolete, leftovers, or trash. In kicking off the retrograde project, items from 3-5 years ago had to be identified. FEMC items were identified and permission was obtained to sell items contained in 5 mil vans. These are being advertised locally in PA. The next step is to identify the remaining items with the help of grantees and the marine staff. RPSC will send an inventory spreadsheet to the science groups for help in identifying items to be sent back to the US or to be disposed.

POLARICE is being upgraded to include TCN numbers. Barcode trackers will be implemented to help track cargo more easily and with fewer errors.

Sample Shipments

Logistics, Marine, and Warehouse staff worked together to improve shipments. A new chain of custody form has been added to better track temperature requirements, including how much and when dry or blue ice is added. In addition, efforts are being made to determine a better shipping box with improved insulation. See ThermoSafe Insulated Shipper-VIP http://www.thermosafe.com/content.cfm/tempassurshipper
Logistics will continue to work through shipping issues to ensure safe transport for samples.

Travel

Lynn Dormand reported for the Travel Department and presented newly summarized Deployment guidelines (see page 18 for Deployment general information.). Palmer Users have noted an occasional language problem during travel through Santiago.

PAUC Recommendation 4: Rebecca Shoop (RPSC) will work with AGUNSA to ensure the "meet and greet" staff in Punta Arenas is conversant in English. This will alleviate problems that might arise at the airport with, for example, checking excess baggage, airline ticket changes, etc.

Marine

Ship Station Relations

Alice Doyle, Marine Superintendent, briefly discussed ship-station relations and, following the discussion, the consensus among the meeting attendees is that there were no significant conflicts this past season. In prior years, there was some negative feedback regarding lack of or poor communication when the vessels visited the station. This does not appear to be an issue that requires current action by the committee or RPSC, other than maintaining the status quo.

Ship Scheduling
Alice explained the complicated ship scheduling process to the committee. Some of the factors include: ice conditions, transit times, increased science projects on the islands, and NSF direction. Changes are not made arbitrarily but rather worked through very carefully before being implemented. PAUC members requested that they be kept informed why changes are made.

PAUC Recommendation 5: RPSC (Marine Superintendent) will discuss ship schedule changes with those principal investigators who are affected. Explanation of why/how schedules are changing may be by email or teleconference- but should occur as soon as a change is known.

Members discussed difficulty communicating with all Palmer Users and with RPSC in general.

PAUC Recommendation 6: RPSC will update email/phone list and distribute regularly.

AWS Support

Rob Edwards discussed the Peninsula Automated Weather Stations (AWS) and the difficulties with the University of Wisconsin maintaining and assuming ownership of the AWS. In addition, the equipment appears to be failing in the marine environment in Antarctica. Transporting and keeping spare parts in inventory has also proved difficult. Kathie Hill, RPSC Meteorologist, will be coordinating RPSC support for the new Palmer Meteorological Observing System (PALMOS) as well as the AWS. She will oversee the maintenance and equipment replacement scheduling if a protocol can be agreed upon.

Rob Edwards and Paul Olsgaard discussed the AWS and how best to proceed. One possibility is that RPSC assume full responsibility for AWS maintenance. Difficulties include: the scheduling for moving spare parts to Palmer by vessel, obtaining the schematics from University of Wisconsin, and arranging for the vessel Electronic Technicians to do the work on the AWS. From discussion with marine staff, it might be advantageous for the AWS system to mirror the vessel equipment, thus allowing the ET to step off the vessel and do work on the AWS immediately. Rob ended the discussion by noting that it's still to be determined who has ownership and who will maintain equipment but that this may be resolved with a maintenance/replacement proposal to the NSF.

Wade Jeffrey suggested that Landgon Quetin include this, as a normal extension, in his proposal to NSF. Deneb Karentz will contact and discuss with Brian Stone and others to see what has been done at McMurdo and how best to get this done at Palmer Station. Landgon will bring this topic to his LTER meeting in August.

Science Support Boating

Outboard Engine Upgrade

Randy Sliester, Marine Tech. Supervisor, advised that RPSC has already purchased and shipped Yamaha 4 stroke outboards for use on the vessels. They have been tested and they work well. Weight is 20 lbs. lighter than the Honda that is currently being tested at Palmer Station. The requirements for outboards to comply with EPA laws and is the driving factor in purchasing new motors. Marine techs will be attending a course to become better qualified in operating these motors. See page 20 and http://www.yamaha-motor.com/products/subcatinfo.asp?lid=5&lc=otb&cid=19&scid=2&year=2004&cat=Four+Stroke+Series&scat=Midrange

PAUC Recommendation 7: RPSC will deliver one of the newly purchased 40HP outboard motors to Palmer Station for evaluation.

Randy will be investigating the possible acquisition, if funds become available, of a small aluminum landing craft for use at the island work areas. While the vessel will be used to support island field camps more safely, it could conceivably be available for testing at Palmer Station. See http://www.almarboats.com/2004/content/commercial.php.

Bathymetry Data

Rob Edwards provided the committee with general bathymetric survey costs (see page 21). This was not an FY03 budgeted item and the NSF asked that it not be taken off the FY04 request. Deneb noted that this was submitted as equipment/supplies and this is not where it should be budgeted. Rob will attempt to determine where this item belongs in the budget and then resubmit. Today Rob is asking the committee for further justification for a survey, and what type of survey would be preferred.

Wade Jeffrey noted that the PAUC members support the further pursuit of obtaining bathy data for the following purposes:

1) mooring selection
2) general sampling
3) navigation
4) sediment characteristics/diving
5) benthic habitat
6) seawater intake
7) pier renovations
8) penguin feeding/migratory routes

Wade Jeffrey suggested that RPSC gather the information and he will use it to prepare a justification for RPSC to seek funds from NSF. Chuck Amsler volunteered to ask others who are more knowledgeable about sonar for additional support to RPSC's request. This will be an FY05 budget issue.

PAUC Recommendation 8: Rob Edwards (RPSC) will prepare a document in support of $75K expenditure for Palmer Station Bathy data for consideration by NSF. PAUC will provide additional justification for the survey.

Science Storage

Cara Sucher asked that, as there is limited storage space at Palmer, grantees are asked to send equipment/supplies to the Punta Arenas warehouse for winter storage. Also, if there are other ways the committee can recommend to improve storage, please let Cara or Rob know. Winter over materials should be packaged up and sent back to Punta Arenas warehouse for storage there, rather than left on station and taking up space.

Cara will work to improve the freezer/refrigerator storage capabilities and planning. Perhaps a "dropdown" in the SIP, might allow grantees to inform RPSC ahead of time as to their storage needs, i.e. dead animal storage, chemical storage**.**

Bruce Sidell noted that chemicals would be better left on station rather then transporting them back and forth. In addition, he remembers that grantees were asked to cut back on inventories a few years back on the assumption that the Station would have the inventory on hand. He is concerned that with these renewed efforts to lower inventory, grantees may arrive on station and not have the supplies needed.

Science Equipment Procurement

Steve Dunbar discussed review of Palmer Station inventory items and that RPSC may be removing unneeded inventory. Life-cycle replacement is an important strategy to improve equipment inventory at Palmer Station. RPSC wants to more carefully decide when equipment needs life-cycle replacement. To this end, the committee can identify equipment that is obsolete, not being utilized, or not operational. Such equipment could then be listed on the replacement list for the NSF. Conversely, if the committee recognizes a need for new equipment, this should be brought to RPSC's attention.

PAUC Recommendation 9: Wade Jeffrey will review emails he's received from grantees for equipment items and forward the list to Rob Edwards (RPSC) for prioritization and consideration when preparing the next budget. RPSC will provide a list of existing equipment for PAUC review.

Aquarium Monitoring System

Howie Tobin explained to the committee how the aquarium monitoring system is working at McMurdo Station- Campbell data loggers and probes allow alarms, readings, data collection, and data sending to other computers. Rob Edwards noted that even though this item was dropped to a low priority request, the McMurdo Station system may be an option for Palmer Station and allow the same monitoring at a low cost. This is informational only.

NEON

Langdon Quetin discussed briefly the National Ecological Observatory Network (NEON). Even though NEON is facing some problems in Congress, it is anticipated that the program may be revived in some function. It is suggested that PAUC/scientists may want to stay aware of the program and consider ways Palmer Station or McMurdo Station might participate.

(*Neon* is "a continent-wide research network consisting of geographically distributed observatories, linked via state of the art communications. Each observatory will consist of a consortium of instrumented field sites and support institutions creating a regional 'footprint.' Collectively: a virtual lab accessed by hundreds of scientists for research to obtain a predictive understanding of the environment." (From the most recent NSF brochure, see also NSF's website: http://www.nsf.gov/bio/neon/start.htm) *from http://ibrcs.aibs.org/reports/pdf/NEON5_June2002.pdf NEON-V: CRIPTON Workshop-Final Report)*

PAUC Business

July 11-12, 2002 PAUC minutes- motioned, seconded, and approved. (one abstain)

Regarding Memberships and nominations- Wade Jeffrey will solicit nominations to replace three expiring terms. Solicitation and election will be by email.

Regarding Chair for next year's meeting- Wade Jeffrey will determine who will serve as Chair at next year's meeting as he will be unavailable to attend.

2002 Actions not completed over the last year, will be carried forward to next year and will be addressed at the 2004 PAUC meeting:

Wade Jeffrey will resend the workboat letter to Bob Farrell for finalizing and then mailing to Dr Karl Erb.

PAUC will provide the users' perspective on long- and short-term priorities for Palmer Station.

Attendance

PALMER AREA USERS' COMMITTEE MEETING
July 16, 2003
Denver, CO

Committee Members Attending:

Dr. Wade Jeffrey, Chair (University of West Florida)	wjeffrey@uwf.edu
Dr. Bruce Sidell (University of Maine)	bsidell@maine.edu
Dr. Langdon Quetin (University of California Santa Barbara)	langdon@icess.ucsb.edu
Dr. Alison Murray (Desert Research Institute)	alison@dri.edu
Dr. Charles Amsler (University of Alabama Birmingham)	amsler@uab.edu
Dr. Germar Bernhard (Biospherical Instruments)	bernhard@biospherical.com

Committee Members Unable to Attend

Dr. H. William Detrich (Northeastern University)	iceman@neu.edu
Dr. Hugh Ducklow (College of William and Mary)	duck@vims.edu
Dr. Karen Baker (Scripps Institute of Oceanography)	Karen@icess.ucsb.edu

National Science Foundation

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Via teleconference:

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Mr. Mark Buckley
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Ms. Lora Folger
Ms. Patricia Jackson
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Mr. Dave Leger
Mr. Ken Navarro
Mr. Paul Olsgaard
Mr. Joe Pettit
Mr. Rob Robbins
Ms. Robbie Score
Ms. Rebecca Shoop
Mr. Randy Sliester
Ms. Cara Sucher

Appendices

Deployment

General:

1. All tickets for USAP Participants will be issued from and returned to the same city, unless otherwise approved by the DSG Manager or the NSF Program Manager.
2. Personal travel is not considered when purchasing a ticket with government funds.
3. The FAR states that a government contractor must use a U.S. Flag carrier, except in certain instances listed in the government regulations. Consequently, all deployments to Punta Arenas will be on a U.S. Flag Carrier, except in extraordinary cases when all carriers are booked full and an individual must deploy on that particular date. In this case, alternative carriers will be investigated and used, if practical. RPSC Travel will manage USAP Participants so they can be booked on a U.S. Flag Carrier, by possibly moving the Participant forward or backward of a desired deployment date. In cases where it is not feasible because of programmatic reasons, RPSC will book them expeditiously.
4. NSF agrees that the ticketing policies should be flexible enough to handle most situation. RPSC will diligently attempt to get the lowest reasonable fare for the government; however, RPSC will also strive to meet an individual's programmatic requirements.

Grantees:

A. Grantee tickets will be issued from Airport of Departure (AOD) to Punta Arenas and return. This ticket requires a 14-day advance purchase and has an identifiable expiration date. The date deploying from AOD or U.S. Port of Embarkation to Punta Arenas cannot be changed. The date of expiration cannot be extended unless for programmatic reasons and approved by the DSG Manager. If a situation occurs where the date must be changed, the ticket hast to be cancelled and re-issued. The additional cost of the ticket may be significant and is th eresponsibility of the Grantee, unless for approved programmatic reasons. All change requests must be in writing to the Travel Supervisor and approved by the NSF.

B. All tickets for Grantees will be issued from and returned to the same city/AOD unless otherwise approved by the NSF.

C. Grantees will be ticketed on their requested departure date as reflected on the submitted TRW (Form PA-A-100b). If the U.S. Flag Carriers are fully booked on that particular date, and RPSC cannot move an RPSC employee to antoher day to accommodate the Grantee, RPSC will request the Grantee to move either forward or backward to a date where a seat is available. If the Grantee insists on traveling on a date that requires an upgrade, RPSC will accomplish the upgrade. If the Grantee insists on traveling on a fully booked date, RPSC will arrange for an

alternate foreign flag carrier if the requirements of the FAR for unavailability of U.S. Flag Carriers are met.

D. Grantee/PI ticketing from abroad: This applies to all Grantees, whether identified in the proposal stage or later. The DSG will not issue tickets with originating travel form outside the United States unless specifically approved in advance for the NSF. POLARICE has been updated to provide identification of international ticketing requirements. The Participant is to provide identification of international ticketing requirements. The Participant is to provide their own ticketing from their home to their PI's institution stateside. The DSG will provide ticketing from the home institution to the international Gateway City (Punta Arenas, Chile). If, in the opinion of the DSG Manager, or the Travel Supervisor in the absence of the DSG Manager, it is in the best interest of the USAP and the Participant for the DSG to provide ticketing from a U.S. city other than that of the home institution, such ticketing may be approved. The ticket cannot be at a greater cost than it would be from the home institution city.

Redeployment

General:

1. Employees, Grantees, and all USAP personnel issued tickets by RPSC may take personal time upon return from Antarctica.
2. All Participants ticketed by RPSC have the option of redeploying FAA (first available flight), or at a specified date after taking personal time, or they can use the credit towards another ticket within the guidelines of the airline that they were originally ticketed on.
3. The following options are available (at the individual's own cost):
   - Personal time in Punta Arenas, Chile
   - A "side" trip can be made from Punta Arenas, Chile to a vacation destination, then back to Punta Arenas, Chile for redeployment.
   - Participants may use the credit from the unused portion of their ticket towards personal travel. One option is to purchase a Round the World Ticket. The American Express Meeting Services Office can assist with personal travel arrangements. All change fees and added costs will be the responsibility of the Participant.
   - Any reroutes of tickets, or stopovers that are for personal reasons, are at the individuals' own expense.
   - Four working days are required to process reservations and tickets in the Punta Arenas Travel Office for other than FAA requests.
4. Excess Baggage: If an individual is entitled to excess baggage, the Punta Arenas Travel Office will provide an MCO (excess baggage coupon) for Punta Arenas-AOD. If the individual elects to take an alternative route, this MCO can be applied to the alternative route. However, any additional excess baggage charges,

such as subsequent legs of a stopover or alternative route, are the responsibility of the individual.

5. If it is necessary to upgrade tickets for programmatic reasons to YOX/Business, or First Class, the Punta Arenas Travel Office will reissue the original tickets. If it is necessary for a person to travel on a Foreign Flag Carrier, then the orginal ticket will be returned to the RPSC Travel Office in Denver for a refund.

Palmer Station Outboard Engine Upgrade

<u>Benefits of four-stroke upgrade</u>:

- Environmental. The current two-stroke OMC outboards produce 80% more polluting emissions than current Yamaha four-stroke engines, with a twostar/very low emissions rating.
- Fuel savings: The current two-stroke OMC outboards consume 30-40% more fuel than current Yamaha four-stroke engines.
- Cost savings: Lower maintenance; the current versions of Yamaha four-stroke engines are more reliable and have fewer breakdowns than the current OMC two-strokes.
- Availability/supply: manufacturer is unreliable, having a difficult time getting spare parts. The OMC parent company is in financial trouble and no longer offers GSA pricing.
- Why not use two-strokes from a different manufacturer: EPA guidelines for outboard emissions for 2006 cannot be met by current two-stroke technology.
- Weight: The Yamaha F40 is approximately 20lbs lighter than the OMC 45/55hp commercial engines we currently use.
- Performance; We already have the Yamahas on the ships Zodiacs. During the RVIB NBP maintenance period in NZ we conducted the initial break-in and evaluation. We found the engines to be easier to start, tilt, and operate than the OMC outboards. We loaded a Mk. V Zodiac with 8 pax and only had to use ¾ throttle to get on step, and to keep the boat on step just ½ throttle was needed.

Hydro Data, Inc.

-----Original Message-----
From: Hydro Data, Inc. [mailto:nbyrne@snet.net]
Sent: Wednesday, December 11, 2002 12:19 PM
To: Edwards, Rob
Subject: Re: Antarctic bathymetric survey

Rob,

Sorry about the delay getting the prices to you. We have been flat out busy. The high winds this fall have caused some delays in field work and we are playing catch-up. Below I have provided some general information. Included are day rates for field work and for travel. Data processing costs depend on the amount of data collected and detail provided. So only a general cost estimate is provided for that task.

Also included is a mobilization/demobilization fee. I provided some general information on the equipment we would use. Under GENERAL SURVEY COSTS the rates provided cover equipment, software and personnel for a standard water depth survey. The side scan sonar and QTC sediment classification system are optional additions to the basic survey.

If your primary objective is to map sediment types and water depth I would recommend using the QTC system in conjunction with the standard water depth survey and not the side scan sonar system. If you would like detailed images of the seabed showing bedrock, sand waves, debris, etc. I recommend using the side scan sonar system. The side scan sonar system requires an additional person onboard the boat. I did not include a second person in my cost estimate. I thought you might have someone available at the Station.

The info. below is provided as an attachment. The text didn't transfer to e-mail txt very well.

Nancy

General Survey Costs
SINGLE BEAM HYDROGRAPHIC SURVEY (includes all equipment to perform a standard water depth survey)
Day rate - Travel (equipment and personnel).....$ 600.00
Day rate – surveying (days on-site).....$1,560.00
Mob/Demob fee.....$ 900.00
Data Processing and Presentation (estimate).....$ 300.00/each day of field data collection

Additional Costs for Optional Equipment and Services
(add below costs to above day rates)

SIDE SCAN SONAR (general sediment type, bedrock mapping, object/debris mapping)
Side Scan Sonar System travel day rate.....$ 200.00
Side Scan Sonar System survey day rate.....$ 450.00
Processing and Presentation (estimate).....$ 950.00/each day of field data collection

QTC SEABED CLASSIFICATION (sediment classification)
Seabed Classification System travel day.....$ 200.00
Seabed Classification System survey day.....$ 433.00
Processing and Presentation.....$ 150.00/each day of field data collection

Example of Costs:

If you choose to have a general water depth and sediment classification survey (and not a side scan sonar survey) your costs would be as follows:

Mob/Demob @ $900
10 days travel @ $800/day = $8,000
30 days on-site@$1,993/day = $59,790
Processing and Presentation @$450/each day of data collection
For example 15 non-weather days = $6,750

A possible total cost would be $75,440.

Technical Information

Water Depth Surveys

Precise water depths are obtained using an Innerspace Model "448" high resolution depth sounder. A 200kHz transducer is used to map water depths within the project areas. Water depths with an accuracy of 0.1 foot are recorded continuously on strip chart and also stored digitally by the vessel-based computer. At preset increments along each survey transect, the computer will mark the depth sounder strip chart to enable correlation with the digital data during post-processing. The Model 448 depth sounder incorporates transducer draft corrections, calibration for speed of sound through water and gain control. Calibration is accomplished by performing "bar checks" at the beginning and end of each survey day.

For areas where traditional high frequency (200kHz) depth sounding can not penetrate to the hard bottom because of fluff, light silt or vegetation, Hydro Data employs the Innerspace Model "449" low frequency (24 kHz) depth sounder. The "449" analog recording prints the hard bottom in black and suspended sediments (or other conditions) in a gray tone.

Water Level

Water level is monitored during survey operations using a Coastal "MicroTide" electronic water level recorder. The "MicroTide" can be programmed to measure and record water level at preset intervals. Data from the water level recorder is downloaded to a field computer at the end of each survey day for post-processing. A continuous tide curve referenced to the project datum is then generated. Time tags recorded in both the tide data and sounding data files allow the correlation of the two data sets during post-processing.

Side Scan Sonar Surveys

For side scan sonar surveys, Hydro Data, Inc. uses a Marine Sonics Technology "Sea Scan" 150kHz/ 600kHz system. The "Sea Scan" system is comprised of a 150 kHz and a 600kHz towfish, a "Sea Scan" Pentium computer system, a 14" color monitor, a 100 meter tow cable and a towfish depressor.

In operation, the sonar sensor unit, referred to as the tow-fish, is towed by the survey vessel past an object or through the area of investigation. Two simultaneous fan-shaped acoustic beams, oriented at right angles to the tow-fish, are continually transmitted and then reflected off objects and seafloor features. The reflected signals are received by the transducers in the tow-fish, filtered, amplified and presented graphically to yield a display analogous to an oblique photograph of the river bottom and the objects on it. The side scan sonar system accepts Differential Global Positioning System (DGPS) information which is integrated with side scan sonar data, providing correlation of latitude-longitude

location and side scan targets. For positioning, Hydro Data, Inc. employs a Leica Model 9400N (navigator) and Model 9400R (reference station) DGPS system.

Side scan sonar applications include: sunken vessel, airplane, and car searches; archeological and geological investigations; submerged cable mapping; shellfish bed mapping; and monitoring fish.

Analysis and interpretation of the side scan sonar imaging is performed by our staff and presented as a written report including illustrations.

QTC Sediment Classification System

The QTC is a digital acoustic seabed classification system which is integrated with our existing depth sounder and DGPS system. The QTC seabed classification is based on the shape of the first returning echo from the seabed. The returning echo sounder signal is processed to determine and group similar acoustic signatures which are stored in a specific catalog. Different seabed types are identifiable because different bottom types have different acoustic signatures. Classification incorporates both geological and biological features.

Final Presentation

On completion of field work, data will be presented as E-sized plan view drawings showing:

Plotted depths
Depth contours
Side scan sonar targets (optional)
Seabed classification (acoustic contours)
Shoreline and grid tics

If a side scan sonar survey is included a written report with annotated side scan sonar images (example: TIF, BMP etc.) will be provided.

Final data presentations will be provided as hard copy drawings and in electronic format.