

PALMER AREA USERS'
COMMITTEE
(PAUC)
MEETING

31 May and 01 June, 2001
Denver, Colorado

PALMER AREA USERS' COMMITTEE MEETING 31 May-01 June, 2001

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Executive Summary

The annual Palmer Area Users Committee meeting was held at the Raytheon Polar Services Company in Denver, Colorado on 31 May – 1 June 2002. Seven members and substitutes attended in person, and two additionally participated by conference call. An innovation this year was the use of video teleconference equipment to allow participation by National Science Foundation Office of Polar Program staff directly from the NSF headquarters in Arlington, Virginia. Many departments of RPSC were represented. The Denver venue allowed support staff to attend as necessary and have easy access to information, while still keeping the total cost of the meeting low.

The meeting opened with overviews of the general status of the NSF, PAUC, and RPSC. Dr. Karl Erb presented the budget outlook for the NSF, and encouraged the Committee to think of new initiatives that might be supported over a ten year planning horizon. A review of the PAUC recommendations from the previous meeting showed most to have been largely completed. The first full contract year for RPSC, while full of challenges, was also largely successful. An update on new organizational and functional staffing within RPSC was presented to the Committee.

The bulk of the meeting was oriented to the presentation and discussion of specific issues, organized by the different RPSC departments; Logistics, Deployment Specialist Group, Facilities, Information Technology, Science Support and Technical Services, Lab and Field Operations, Station Operations, and Marine Operations. A significant amount of time was reserved for discussion and open forum, which resulted in nineteen Committee Recommendations.

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Code of Conduct for Palmer Station Laboratories
Dry Shippers and You!

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Agenda

Palmer Area Users' Committee Annual Meeting, 2001

PAUC only Executive Session, 8 - 10 pm, Holtze Executive Village

Thursday, 31 May

Time (EDT)	time (MDT)	topic	presenter
9:00:00 AM	7:00:00 AM	coffee & bagels	
9:15:00 AM	7:15:00 AM	coffee & bagels	
9:30:00 AM	7:30:00 AM	State of PAUC, incl. review of 2000 actions, priorities from Exec. session	Day, Edwards
9:45:00 AM	7:45:00 AM	State of RPSC	Atwood
10:00:00 AM	8:00:00 AM	State of NSF/OPP	Erb
10:15:00 AM	8:15:00 AM	State: discussion	
10:30:00 AM	8:30:00 AM	Logistics: PA Warehouse, space, shipment of cargo	Borden
10:45:00 AM	8:45:00 AM	Logistics: discussion	
11:00:00 AM	9:00:00 AM	Deployment Specialist Group: Travel and Medical	Dormand
11:15:00 AM	9:15:00 AM	DSG: discussion	
11:30:00 AM	9:30:00 AM	DSG: discussion	
11:45:00 AM	9:45:00 AM	break	
12:00:00 PM	10:00:00 AM	FEMC: update on remodel	Meredith
12:15:00 PM	10:15:00 AM	FEMC: pier renovations, seawater intakes	Meredith
12:30:00 PM	10:30:00 AM	FEMC: summer minor projects	Cohenour
12:45:00 PM	10:45:00 AM	FEMC: discussion	
1:00:00 PM	11:00:00 AM	FEMC: discussion, including summary and review	
1:15:00 PM	11:15:00 AM	lunch	
1:30:00 PM	11:30:00 AM	lunch	
1:45:00 PM	11:45:00 AM	lunch	
2:00:00 PM	12:00:00 PM	review of morning session	Day, Edwards
2:15:00 PM	12:15:00 PM	IT: PA upgrade, USAP private network	Abel
2:30:00 PM	12:30:00 PM	IT: satellite link	Fox
2:45:00 PM	12:45:00 PM	IT: discussion	
3:00:00 PM	1:00:00 PM	Sci. Services: new weather station (PALMOS)	Powell
3:15:00 PM	1:15:00 PM	Sci. Services: UNAVCO GPS support	Kurnik
3:30:00 PM	1:30:00 PM	Sci. Services: Palmer GIS	Brunt
3:45:00 PM	1:45:00 PM	Sci. Services: UV monitoring	Booth
4:00:00 PM	2:00:00 PM	Sci. Services: CTBT update	Atwood
4:15:00 PM	2:15:00 PM	Sci. Services: discussion	
4:30:00 PM	2:30:00 PM	Sci. Support: ESP	Kish
4:45:00 PM	2:45:00 PM	Sci. Support: discussion	
5:00:00 PM	3:00:00 PM	break	
5:15:00 PM	3:15:00 PM	PAUC business	Day
5:30:00 PM	3:30:00 PM	open forum	Day
5:45:00 PM	3:45:00 PM	open forum	
6:00:00 PM	4:00:00 PM	adjourn for day	

Friday, 1 June

Time (EDT)	time (MDT)	topic	presenter
9:00:00 AM	7:00:00 AM	coffee & bagels	
9:15:00 AM	7:15:00 AM	coffee & bagels	
9:30:00 AM	7:30:00 AM	review of previous day	
9:45:00 AM	7:45:00 AM	Lab: safety	Doggett
10:00:00 AM	8:00:00 AM	Lab: capital equipment	Tobin
10:15:00 AM	8:15:00 AM	Lab: discussion	
10:30:00 AM	8:30:00 AM	Field: boating, field food, issue gear	Edwards
10:45:00 AM	8:45:00 AM	Field: discussion	
11:00:00 AM	9:00:00 AM	Field: discussion	
11:15:00 AM	9:15:00 AM	Field: discussion	
11:30:00 AM	9:30:00 AM	Operations: crane, food service, bedding	Nugent
11:45:00 AM	9:45:00 AM	discussion	
12:00:00 PM	10:00:00 AM	discussion	
12:15:00 PM	10:15:00 AM	break	
12:30:00 PM	10:30:00 AM	Marine: station/vessel/ECO interaction, workboat	Hickey
12:45:00 PM	10:45:00 AM	discussion	
1:00:00 PM	11:00:00 AM	discussion	
1:15:00 PM	11:15:00 AM	lunch	
1:30:00 PM	11:30:00 AM	lunch	
1:45:00 PM	11:45:00 AM	lunch	
2:00:00 PM	12:00:00 PM	lunch	
2:15:00 PM	12:15:00 PM	review of morning session	Day, Edwards
2:30:00 PM	12:30:00 PM	open forum	Day
2:45:00 PM	12:45:00 PM	open forum	
3:00:00 PM	1:00:00 PM	open forum	
3:15:00 PM	1:15:00 PM	open forum	
3:30:00 PM	1:30:00 PM	summary and review of current actions	
3:45:00 PM	1:45:00 PM	summary and review of current actions	
4:00:00 PM	2:00:00 PM	adjourn	

Actions/Recommendations PAUC Meeting 5/31-6/01/01

RECOMMENDATION 1: PAUC (Tad Day) will submit a Palmer Station Workboat report to Dr. Karl Erb for Dr. Erb's use in future discussions with the NSB.

RECOMMENDATION 1a: PAUC (Bill Detrich) will work up an historical vessel usage schedule and an analysis of days at sea; Palmer Station area grantees will be surveyed to demonstrate how much the R/V NBP and R/V LMG are used in the Palmer Station area; a strawman schedule for the workboat will be drafted to show possible scenarios. Bill Detrich will provide presentation and information to ARVOC at their next regularly scheduled meeting. (tentative ARVOC meeting date October, 2001).

RECOMMENDATION 2: PAUC will continue to study the possibilities of the genome center.

RECOMMENDATION 3: RPSC will periodically update the Punta Arenas warehouse inventory lists (both support operations and science equipment). Brien Borden will provide PAUC with the science equipment inventory list for their review, to help determine what items, if any, can be considered obsolete. RPSC and NSF can then take steps to dispose of obsolete items stored in the warehouse either through NSF disposition policy or by return to grantee's home institution.

RECOMMENDATION 4: RPSC will work to develop clothing issue web site. Initially the web site may be a clothing list with description. Clothing pictures with descriptions may be added to the web site as time/costs allow.

RECOMMENDATION 5: PAUC (Tad Day) will solicit comments from the science community on how well the RPSC web site is meeting their needs, i.e., is the information useful, are there other topics/items that need to be on the site, etc. PAUC will provide RPSC with comments from the science community.

RECOMMENDATION 6: RPSC Travel Department will work to provide clearer instructions to grantees for international travel. Travel issues of PAUC concern include: policy for ticketing foreign grantees, travel itineraries/restrictions, self-ticketing policy, reimbursement issues, excess baggage. PAUC requested that a written policy from RPSC detailing ticketing procedures be made available to grantees.

RECOMMENDATION 7: RPSC (Steve Meredith) will make available to PAUC the 60% completed BioLab design plans by the end of the PAUC meeting June 01, 2001. All suggestions/input from PAUC regarding the BioLab plans must be submitted to Steve Meredith no later than July 01, 2001. Steve will be available to discuss any grantee BioLab suggestions following his site visit, estimated date of return to RPSC June 19, 2001.

RECOMMENDATION 8: RPSC will provide PAUC with an updated written description of data provided by PALMOS, covering parameters, formats, and accessibility. RPSC will maintain synoptic sea ice coverage observations.

RECOMMENDATION 9: NSF (Pat Smith) and RPSC (Dale Abel) will draft a plan to better explain to PAUC/grantees the new email policies/network security issues, including a schedule for implementing changes.

RECOMMENDATION 10: PAUC (Tad Day) will solicit the science community to help determine how the GIS might best be used at Palmer Station, i.e. boating navigation, safety, field work, etc. This information will assist Kelly Brunt (RPSC) in providing GIS products and applications at Palmer, including a Chairperson.

Recommendation 11: Biospherical Inc. (Rocky Booth) will provide PAUC with an update on availability of data/services from the UV monitoring network by September 1, 2001. PAUC (Tad Day) will distribute update to the science community.

RECOMMENDATION 12: PAUC Chair (Tad Day) will solicit nominations for new members to replace those with expiring terms. Tad Day will continue as ex-officio member, Bruce Sidell will continue as active member for two more years. Tad Day will conduct electronic balloting and report election results to PAUC/RPSC/NSF for three new PAUC members including a chairperson.

RECOMMENDATION 13: PAUC will review the DRAFT Code of Conduct (COC) and submit any changes/suggestions to RPSC (Rob Edwards/Ken Doggett) by June 22, 2001 for consideration when RPSC finalizes the COC.

RECOMMENDATION 14: PAUC (Tad Day) will solicit from PAUC and the science community additional recommendations for capital equipment items and conduct a ballot to prioritize the list.

RECOMMENDATION 15: PAUC (Chuck Amsler) will review the Diving SOP draft and will work with Rob Robbins, Diving Coordinator RPSC, in the completion of the final SOP.

RECOMMENDATION 16: RPSC (Rob Edwards) will complete additions to the Boating Regulations with review from the PAUC (Bill Fraser). The Boating SOPs will be finalized by mid-August and in place for 2001-2002 season start.

RECOMMENDATION 17: PAUC (Bill Fraser) will solicit from the science community ideas/suggestions on the most appropriate jacket colors for work in the field. Survey results will be provided to RPSC.

RECOMMENDATION 18: RPSC will continue to work with the NSF on crane options for Palmer Station. The NSF and RPSC renovation teams will have more information following the Palmer Station site visit in June 2001.

RECOMMENDATION 19: PAUC (Tad Day) will provide a list of recommended items (general use and recreational items) for possible acquisition as inventory stock at Palmer Station. RPSC (Rob Edwards) will assess the current supplies (e.g., sewing supplies) on station and may re-supply some items before season start.

Welcome, review of Agenda, and Round Table Introductions

The meeting opened at 7:30MDT followed by.....

Dr. Erb's address to PAUC

Dr. Karl Erb informed the PAUC of a National Science Board (NSB) meeting he attended May 21-22, 2001. Discussion at the meeting included the NSB's efforts to develop a 10-year horizon for innovations in Antarctic research. Dr. Erb suggested that PAUC submit the Palmer Station workboat endorsement to him for further submission to the NSB. The workboat might then be considered a part of the NSB planning process and, as budget/funding allows, the workboat could become an acquisition for Palmer Station through the efforts of NSB.

RECOMMENDATION 1: PAUC (Tad Day) will submit a Palmer Station Workboat report to Dr. Karl Erb for Dr. Erb's use in future discussions with the NSB.

PAUC discussion during the two day meeting involved workboat usage in the Palmer Station area, vessel size, science opportunities that might conducive to the workboat. From the discussion it was determined that more information is needed to support the request for a Palmer Station area workboat.

RECOMMENDATION 1a: PAUC (Bill Detrich) will work up an historical vessel usage schedule and an analysis of days at sea; Palmer Station area grantees will be surveyed to demonstrate how much the R/V NBP and R/V LMG are used in the Palmer Station area; a strawman schedule for the workboat will be drafted to show possible scenarios. Bill Detrich will provide presentation and information to ARVOC at their next regularly scheduled meeting. (tentative ARVOC meeting date October, 2001).

Dr. Erb noted in his presentation to PAUC that the NSF is still very much interested in possibilities of a centralized, dedicated facility to genome studies and polar genetics. Recommendation #6 from the June 19-20, 2000, PAUC meeting identified Drs. Manahan, Detrich, and Jeffrey as the working group tasked with polling the science community for input/feasibility of such a facility.

RECOMMENDATION 2: PAUC will continue to study the possibilities of the genome center. (Dr. Erb, when the opportunity arises, will discuss poll results with Dr. Manahan.)

State of Palmer Area Users' Committee

Rob Edwards, RPSC Palmer Lab Supervisor, discussed the issues/concerns the committee expressed last year about the uncertainty of the new contract with Raytheon Polar Services Company (RPSC). See next section, State of RPSC, for Don Atwood's discussion on the changes and improvements within RPSC. Rob stated that despite the issues/concerns Palmer Station has another successful season.

Tad Day reviewed the status of recommendations from the June 19-20, 2000 PAUC meeting. (refer to page 6)

Status of Recommendations from the June 19-20, 2000 PAUC meeting.

RECOMMENDATION 1- SHIP/STATION INTERACTION

A REVISED DOCUMENT DRAFTED BY BRUCE SIDELL ET AL WAS APPROVED BY PAUC, ARVOC, RPSC, AND NSF AND INCORPORATED INTO POLICY MANUALS.

RECOMMENDATION 2-STATION WORK BOAT ACQUISITION

BRUCE SIDELL ETAL DISCUSSED ISSUE WITH ARVOC. ARVOC WORKING GROUP FORMED (BILL DETRICH ET AL). NSF REMAINS INTERESTED IN THE CONCEPT.(Dr. Erb suggestion Re: Work boat follows.)

RECOMMENDATION 3- TRAVEL PROBLEMS

RPSC WILL KEEP PAUC INFORMED OF EFFORTS TO ADDRESS ISSUES (EXCESS BAGGAGE, OPEN ENDED TICKETS, TIMELY SERVICE). COMMENTS FROM THE SCIENCE COMMUNITY TO PAUC SUGGEST PROBLEMS REMAINED, AND IN SOME CASES INTENSIFIED DURING PAST FIELD SEASON.

RECOMMENDATION 4-BOATING (ZODIAC) GUIDELINES

A DOCUMENT WAS DRAFTED BY BILL FRASER ET AL, REVISED, AND SENT TO RPSC. NSF REQUESTS CLARIFICATIONS ON SOME TOPICS. PAUC AWAITS RPSC ACTION. (REQUEST TO REVIEW AND COMMENT ON NEW CLARIFICATIONS.)

RECOMMENDATION 5- CAPITAL EQUIPMENT

PAUC SOLICITED EQUIPMENT SUGGESTIONS, AND SUBMITTED PRIORITIZED LIST TO RPSC.

RECOMMENDATION 6-POLAR GENETICS AND GENOME CENTER

A VISION STATEMENT ON A POLAR GENETICS AND GENOME CENTER WILL BE DEVELOPED BY DONAL MANAHAN ETAL AND SUBMITTED TO RPSC AND NSF (IN PROGRESS).

RECOMMENDATION 7-UV MONITORING NEEDS

PAT NEALE AND GREMAR BERNHARD WILL SOLICIT SCIENCE COMMUNITY ON UV DATA NEEDS AND REPORT BACK TO PAUC AND RPSC. LARGELY COMPLETED.

RECOMMENDATION 8-AUTOMATIC WEATHER STATION (AWS)

PAUC ET AL REVIEWED PROPOSED NEW AWS OPERATIONS AND SENSOR LOCATIONS WITH RPSC. AWS UNDER DEVELOPMENT.

RECOMMENDATION 9-COMPREHENSIVE TEST BAN TREATY (CTBT)

PAUC WILL COMMENT ON PALMER CTBT PROJECT AS REQUESTED

RECOMMENDATION 10-STATIONARY CRANE

PAUC WILL COMMENT ON STATIONARY CRANE PROPOSAL/ISSUES AS REQUESTED.

RECOMMENDATIONS 11 AND 12-LAB RENOVATIONS

PAUC WILL COMMENT ON STATION RENOVATIONS. PAUC COMMENTS OVER THE PAST YEAR HAVE BEEN MINOR.

RECOMMENDATION 13-AQUARIUM UPGRADE

A WORKING GROUP (CHUCK AMSLER ET AL) PROVIDED RPSC WITH SUGGESTIONS ON AN AQUARIUM UPGRADE.

RECOMMENDATION 14-PAUC POC FOR INFORMATION TECHNOLOGY

PAUC RECOMMENDED THAT KAREN BAKER BE THE POINT OF CONTACT FOR INFORMATION TECHNOLOGY (IT) ISSUES.

RECOMMENDATION 15-PAUC BYLAWS

PAUC REVISED BYLAWS WERE UNANIMOUSLY APPROVED AND FINALIZED BY RPSC.

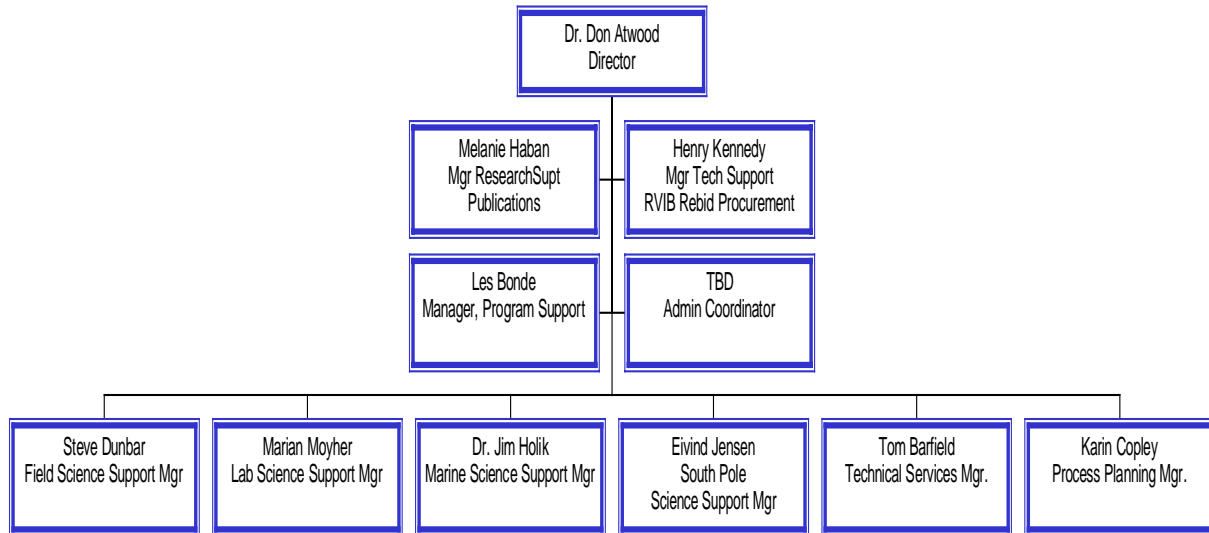
RECOMMENDATION 16-NEW PAUC MEMBERS

PAUC SOLICITED NOMINEES AND HELD ELECTIONS FOR TWO VACANIES.. KAREN BAKER AND CHUCK AMSLER WERE ELECTED TO PAUC AND BEGAN THREE-YEAR TERMS ON OCTOBER 1, 2000. THE TERMS OF PAT NEALE AND DAVE KIEBER ENDED.

RECOMMENDATION 17-MEETING ACTION ITEMS AND MINUTES

IN LATE SUMMER, RPSC PROVIDED PAUC WITH A LIST OF ACTION ITEMS/RECOMMENDATIONS FROM THE ANNUAL MEETING (JUNE 2000) WHICH PAUC APPROVED. IN EARLY WINTER FALL, RPSC PROVIDED PAUC WITH MEETING MINUTES WHICH WERE ALSO APPROVED.

State of RPSC



Don Atwood provided the above Science Division Organization Chart for review and noted that, even though there were some first-year contract transition difficulties, the overall responses from grantees for 2000-2001 were favorable.

Don continued by noting the following changes and improvements within RPSC:

- A newly created Deployment Specialist Group (DSG) has been established and Lynn Dormand, DSG Manager, will be coordinating and combining the Medical and Travel Departments into one department. Plans are to hire additional staff and to become a more cohesive, service-oriented department. Grantees and RPSC employees will be able to contact the DSG for information on travel itineraries, medical pq status, hotel arrangements, etc.

The Electronic Support Plan (ESP) continues to be developed and improved over time. This last year has seen changes to ESP that allow easier ESP submission from the Grantees' home institutions and the Operating Requirements Worksheets (ORW) and Science Information Packet (SIP) are now a part of the ESP.

- RPSC now has in place a Standard Operating Procedure (SOP) for the Points of Contact. This SOP is useful in allocating projects to specific POCs and is also a useful learning tool for new POCs.
- A Planning Analyst Manager, Karin Copley, was hired to research various allocation tools and to develop/improve the science planning process.
- The Research Support Plan (RSP) is being fine tuned with the intent that the RSP will be the contractual document between RSPC and the Principal Investigator. RPSC will have the RSP available to the Principal Investigators six weeks prior to the event's first participant's deployment date. The Principal Investigator/Grantees are asked to review the RSP closely and bring to the POCs' attention any discrepancies. The RSP may also be a useful tool during the on-ice out briefs – a comparison between what was requested and what was actual.
- Reorganization within the Science Division included moving the ESP Project Leader under the Planning Analyst Manager and creating a Manager, Technical Services position. Tom Barfield was hired into this new position and will oversee the cryogen, Automatic Geophysicals Observatories (AGOs), Comprehensive Test Ban Treaty, and U/V monitoring activities.

Logistics

Brien Borden discussed with the PAUC members the following Peninsula Logistics topics and changes.

- **Punta Arenas Warehouse**
 - ***Additional Space Acquisition***
 - **900 cubic meters Indoor Warehouse Space (Warehouse #2)**
 - Palmer Station Equipment and Supplies
 - Field Support Staging
 - GLOBEC storage
 - **900 cubic meters Outdoor Storage Area**
 - Oversized Equipment
 - Container, Flat Rack, Lab & Berthing van holding area
 - **Use of Warehouse #1**
 - Clothing issue
 - Administrative office for Warehouse
 - Storage of Marine Cruise materials
 - Hazardous Storage Area
 - Ultra Low Freezers
 - Work Shop Area (in process)
 - Warm Storage (in process)
 - Chemical Storage (in procurement)
 - Electronics part storage area (in process)
 - ***Clothing Upgrade***
 - Redefined clothing issue standard
 - Created “Additional Clothing” available for issue
 - Instituted clothing issue meeting times for participants
 - Defined minimum stock levels for ECW garments
 - Annual inventory audits and ordering plan
 - ***IT Technology Upgrade***
 - Benefits to USAP in Punta Arenas
 - **Work in process**
 - Electrical upgrade for WHSE #1
 - 24/7 network support/email capability
 - Visitor work stations
 - **Full use of CTS/tracking**
 - future - electronic transfer of data into system
 - future - wireless comms. with vessel (in port only) to increase email visitor stations
 - **Multi-use software capability**
 - Better usage of AGUNSA labor
 - ***Field Gear Consolidation***
 - **In process**
 - Areas of operation (Room off mezzanine/Warehouse #2)
 - Handling of “inventory” vise “cargo in transit”
 - Inventory management system
 - ***Excess /Obsolete material purging***

- Additional space allowed Marine Division to evaluate equipment and materials storage
- Warehouse #2 allows Palmer WBS managers to more easily (and quickly) evaluate equipment and materials
- Retro 40 ft. container for resale
- For science equipment, need to establish dead-time before retro
 - After 2 Years?
 - Material not required within 2 years - retro?
- ***Planned Upgrades/Impacts***
 - Increase clothing area
 - Males and Females in separate fitting sessions
 - Encompasses office area not currently utilized
 - Clothing area becomes one private room (current men’s fitting area), one large fitting room, and one bathroom
 - New tile flooring
 - Walls and ceiling re-painted
 - Finish off ceiling in clothing inventory area
 - Commercial Shipping Port is the Catalina Pier
 - Commercial Reefer operations no longer require power from Whse #1
 - Opens space on outside of for lab vans, and USAP equipment requiring power
- **Retrograde Shipping Issues**
 - Air transport restrictions during tourist season in Chile
 - 30 Day commercial air transport to PTH. Shipments with earlier deliveries to the US require separate advisories and communication for priority forwarding
 - Lan Chile operates “Agency” operates outside Santiago
 - AGUNSA intervention with the Director of Customs, Patagonia Region - slow customs processing
 - ERR’s require approval and contract in place from Purchasing before PTH can ship to supplier
- **Brief Discussion of Logistics Metrics**
 - Logistics tracks cargo on time delivery and effective use of transportation costs
 - Categories include material originated by purchase order and grantee generated cargo
 - Metrics involve the timely communication of project requests according to material cut-off schedules
 - Metrics are effected by everyone
- **Palmer Station Planning 2001/02**
 - Major planning and operational issues related to supporting GLOBEC vessel cruises and the Bio-Lab Upgrade/Construction schedule at Palmer Station.
 - Minimal space is available during the cruises to support the estimated 24 containers of material required for the winter 2002 projects
 - Places pressure on the ability of the station to stage materials in advance of the GLOBEC cruises

- Removal of construction debris and station waste in question
- Added pressure of haz waste removal
- Alternative solutions being sought for recommendation to NSF

Actions resulting from Brien Borden's presentation:

Brien Borden discussed the upgrades to the Punta Arenas, Chile, warehouse and storage facilities. Obsolete and unused equipment needs to be removed from the warehouse. PAUC recommended that the length of time required before an item is considered obsolete be three years instead of two years.

RECOMMENDATION 3: RPSC will periodically update the Punta Arenas warehouse inventory lists (both support operations and science equipment). RPSC (Brien Borden) will provide PAUC with the science equipment inventory list for their review, to help determine what items, if any, can be considered obsolete. RPSC and NSF can then take steps to dispose of obsolete items stored in the warehouse either through NSF disposition policy or by return to grantee's home institution.

Brien Borden discussed upgrades to the clothing issue at Punta Arenas. Following the presentation, Karen Baker suggested that descriptions of the issue clothing be posted to the web site for grantee's information prior to deployments.

RECOMMENDATION 4: RPSC will work to develop clothing issue web site. Initially the web site may be a clothing list with description. Clothing pictures with descriptions may be added to the web site as time/costs allow.

During the discussion of web site development and posting clothing inventory to web, PAUC was asked if they feel the web site is user friendly, informative, and useful.

RECOMMENDATION 5: PAUC (Tad Day) will solicit comments from the science community on how well the RPSC web site is meeting their needs, i.e., is the information useful, are there other topics/items that need to be on the site, etc. PAUC will provide RPSC with comments from the science community.

Deployment Specialist Group (DSG)

Lynn Dormand, DSG Manager, began discussion by noting that the former Travel Department has been reconstructed into a more service oriented organization now known as the Deployment Specialist Group. In the reconstruction, the Travel Department and the Medical Department now report as one unit under the direction of Lynn.

Lynn continued by identifying obstacles encountered during the first year of RPSC's contract. These included:

- Difficulty blocking airline seats due to Olympic travel
- Last minute ticketing
- Self-ticketed participants did not relay itineraries to RPSC Travel Department
- Participants arrived in Christchurch without data entry into the Personnel Travel System (PTS) and /or updates were not provided in PTS (this and self-ticketing meant that hotel accommodations were not made prior to Christchurch arrival and that clothing was not pre-staged for the participants
- Travel and Medical Departments were overwhelmed by telephone calls

-Expense reports were not submitted in a timely manner to allow for repayment to participants.

In an effort to improve service, the following mission statement, strategies, and responsibilities have been implemented.

DSG MISSION STATEMENT

We are the controllers of the deployment process to assure that participants deploy when manifested, while adhering to *far* regulations and deployment requirements, in an efficient and cost-saving manner, while providing excellent customer service.

DSG STRATEGIES

Creation and participation in deployment integrated process team (IPT)

Creation of the Deployment Specialists Group

Combination of Medical and Travel to Create Synergy

Identify Processes

Solve Ownership Disparities

Utilize PTS as sole tracking database

Identify changes in the PTS entry screens and disseminate changes to users

Forms revised

Utilize 1-800 call in number for customer point of contact to the DSG

Meet with individual divisions within RPSC to identify DSG/POC requirements

Point of contact within divisions to provide primary backup tracking of personnel throughout the system

OUTLINE OF DSG RESPONSIBILITIES

Customer service center for all deploying personnel

Issue deployment package (Travel, Housing, and Medical/Dental forms, General Information Packet)

Maintain contact with participants regarding their PQ status, psych screening, orientation dates, on-ice housing, track deployment forms, and provide travel itineraries (ticketing and hotel accommodations)

Create status reports – made available to Department POCs and Principal Investigators

Participate in redeployment process

The DSG is striving to provide the best possible customer service for all deploying participants and may be contacted at 1-800-688-8606 or deployment@usap.gov.

Action resulting from discussion:

RECOMMENDATION 6: RPSC Travel Department will work to provide clearer instructions to grantees for international travel. Travel issues of PAUC concern include: policy for ticketing foreign grantees, travel itineraries/restrictions, self-ticketing policy, reimbursement issues, excess baggage. PAUC requested that a written policy from RPSC detailing ticketing procedures be made available to grantees.

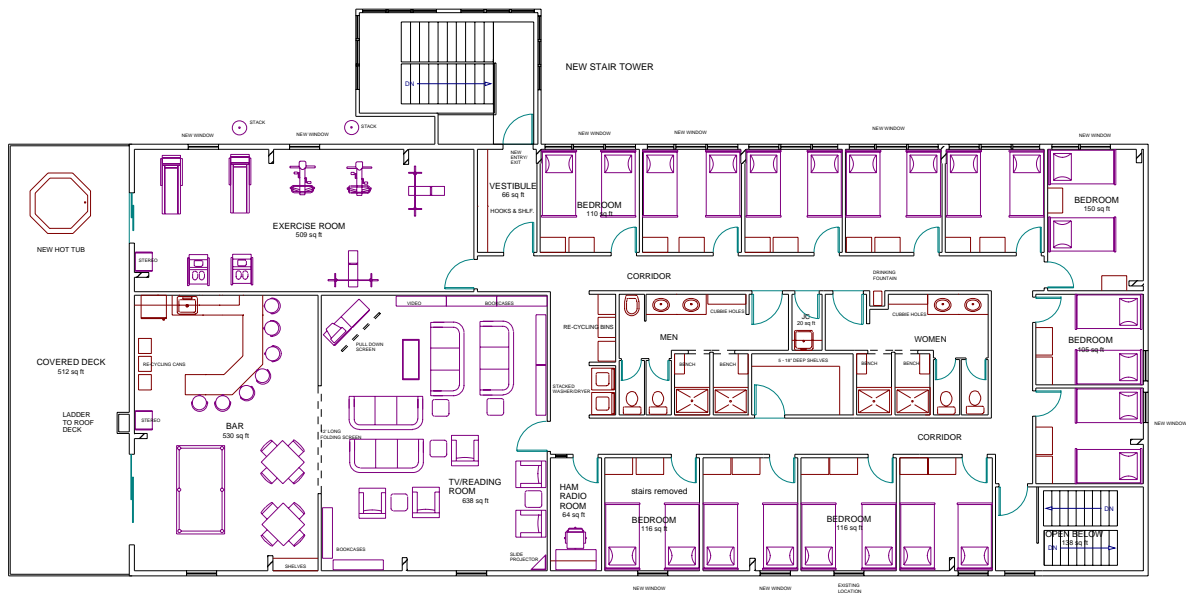
FEMC

Steve Meredith, RPSC Project Engineer, discussed Palmer Station renovations/upgrades. It was noted that the plans are on a tight timeline and PAUC was asked that any review comments be submitted as soon as possible.

Biolab Building Model



Steve Meredith's presentation included Status of GWR Upgrades. It was noted that the plans presented today are conditional, CO issued November 2000.



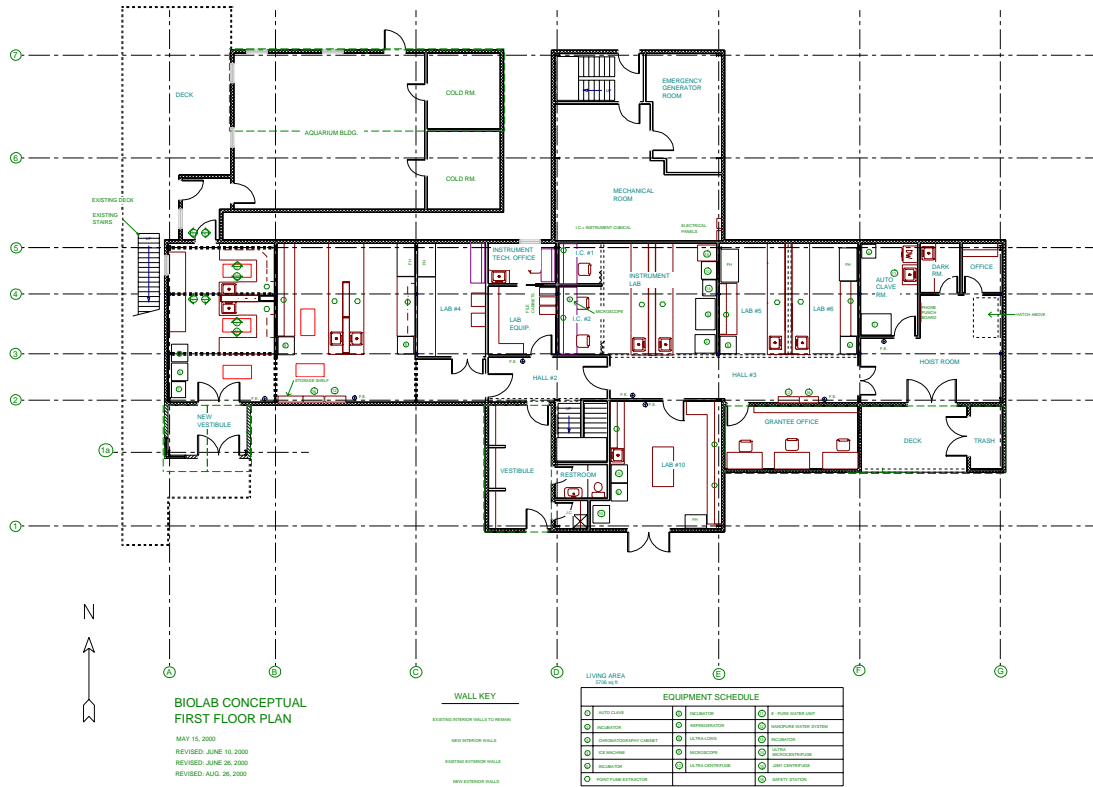
GWR SECOND FLOOR RENOVATION PLAN

4,144 SQ. FT.
JAN. 08, 1999

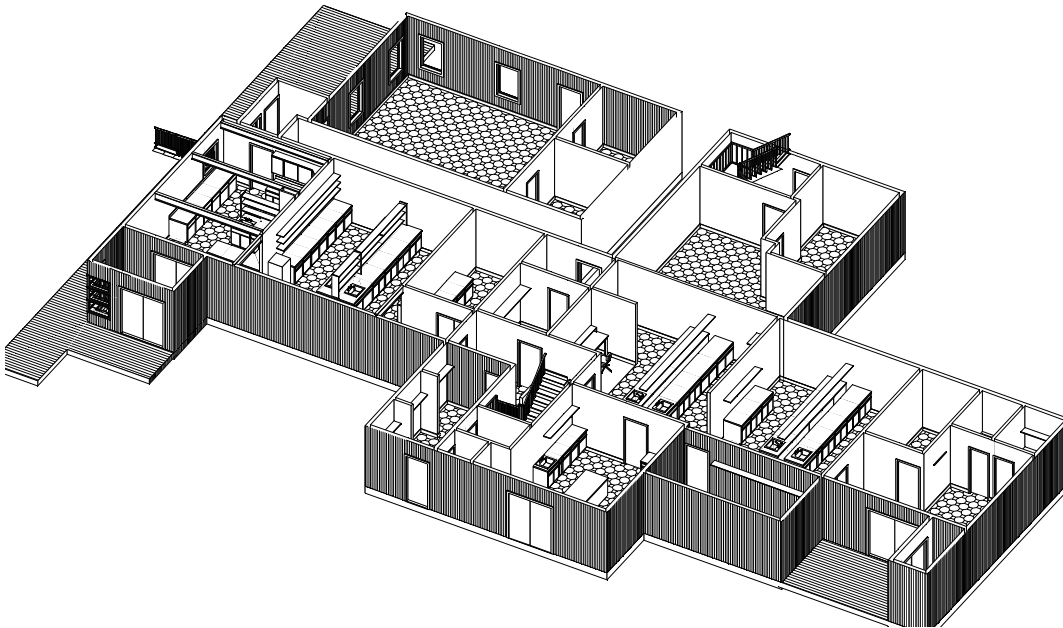
DESIGN FEATURES

12 TWO PERSON ROOMS W/
SIDE BY SIDE BEDS CAPABILITY
24 BEDS TOTAL

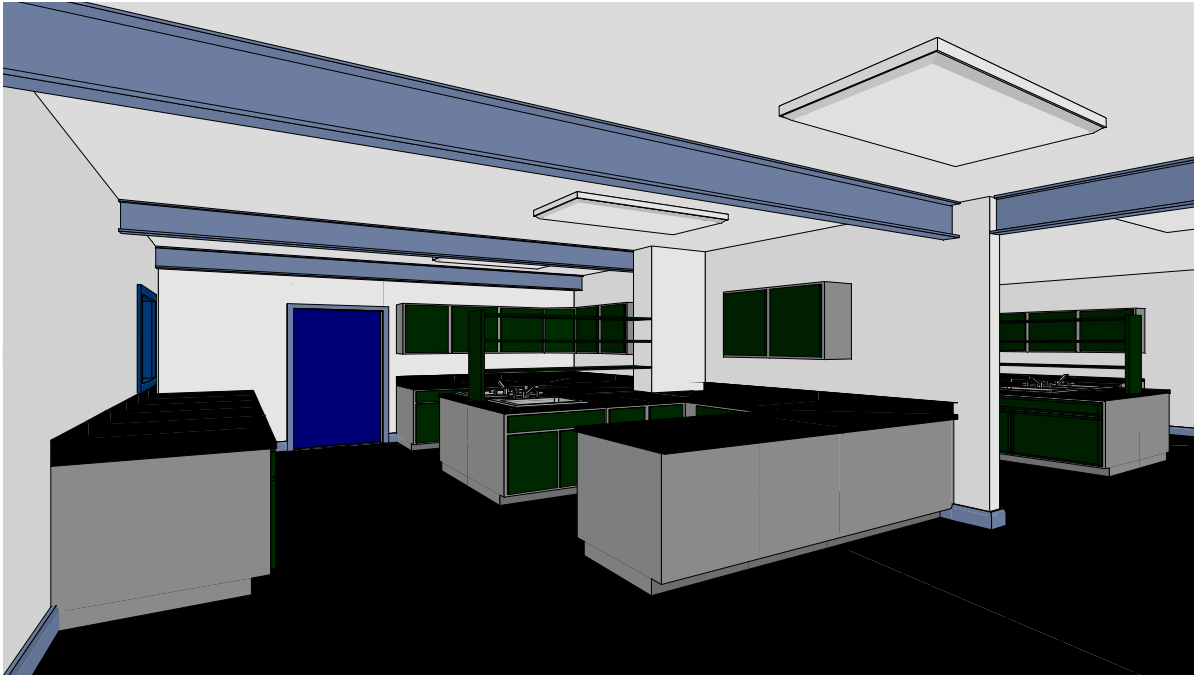
Biolab Renovation



Biolab 3D First Floor



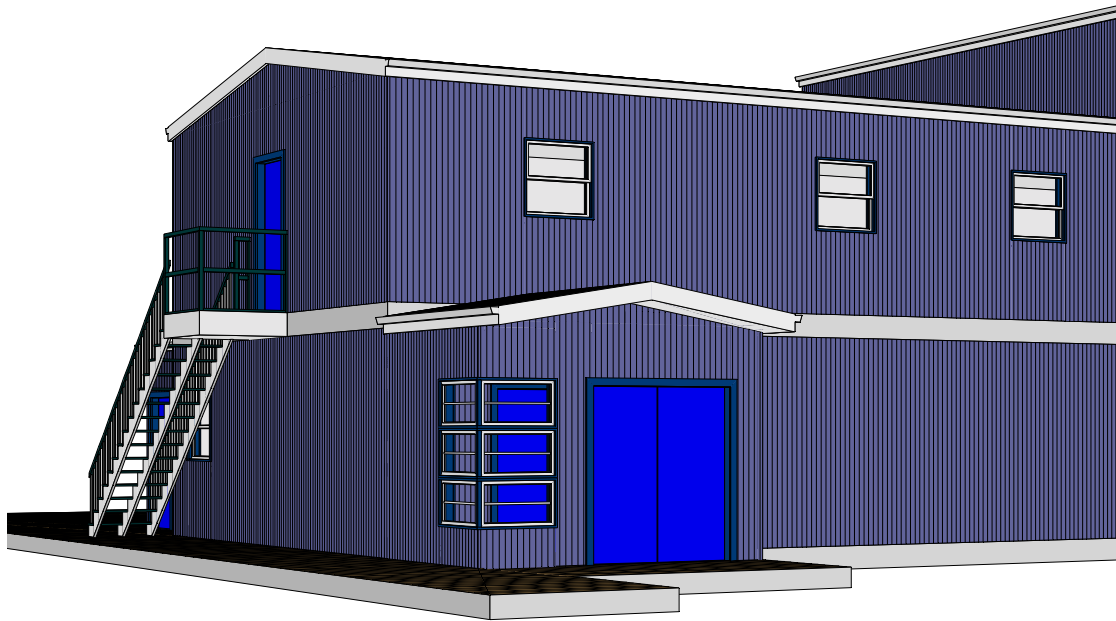
Lab #1 Conceptual Design



Labs #2 and #3 Conceptual Design



New Vestibule



Schedule

Submit 60% design May 23, 2001
Palmer Site Visit and Punch GWR June 2001
Aquarium Re-piping Completed in June 2001
Complete Biolab design drawings August 2001
Procure materials July-December 2001
Ship Materials to Palmer February 2002
Construction March-September 2002

RECOMMENDATION 7: RPSC (Steve Meredith) will make available to PAUC the 60% completed BioLab design plans by the end of the PAUC meeting June 01, 2001. All suggestions/input from PAUC regarding the BioLab plans must be submitted to Steve Meredith no later than July 01, 2001. Steve will be available to discuss any grantee BioLab suggestions following his site visit, estimated date of return to RPSC June 19, 2001.

Steve Meredith noted minor improvements to the plans include:

Exhaust hood – kitchen FY02
Combination sound FY02
GWR cooling lubes FY02
Window leaks in Biolab will be investigated
Chill box in progress
Fuel tank liners may require a specialist
Auto dialers FY02
Exterior painting: mill vans/walkway doors
Water quality upgrade EPD

Pier renovations/seawater intakes

Frank Brier reported that the pier project/design is in process. A consultant has been contracted to do a depth survey. Anticipated design completion date is sometime in FY02. Any ideas or

suggestions from PAUC should be submitted to Frank Brier/Steve Meredith by July 1, 2001. Presentation was informational only and PAUC will be kept apprised of pier and seawater intake developments as this moves forward.

Palmer Weather Station Communications

Nick Powell, RPSC IT Engineer, reported on the Palmer weather station status (PALMOS). Installation of the station is scheduled for June, 2001.

Introduction

- Palmer will receive automated weather station Summer 2001
- SPAWAR 2001 AOEC Action Item # 5 developed to address transmission of observation data
“RPSC, to review and present to the APC methods of routing Palmer Station Meteorological data destined for McMurdo and GTS. AEOC 2000 Action Item. New Due date May APC”

Current Operation

- Observation taken manually with limited equipment
- Observation times: 00, 06, 12, and 18Z
- Manually encoded to SYNOP format (WMO Code Form FM-12) used
- Voice transmission via HF radio to Rothera
- Included in Rothera satcomm transmission to Bracknell UK WMO GTS Regional Telecommunications Hub (RTH)
- Distributed Worldwide via GTS (including link to Washington RTH) & AFTN

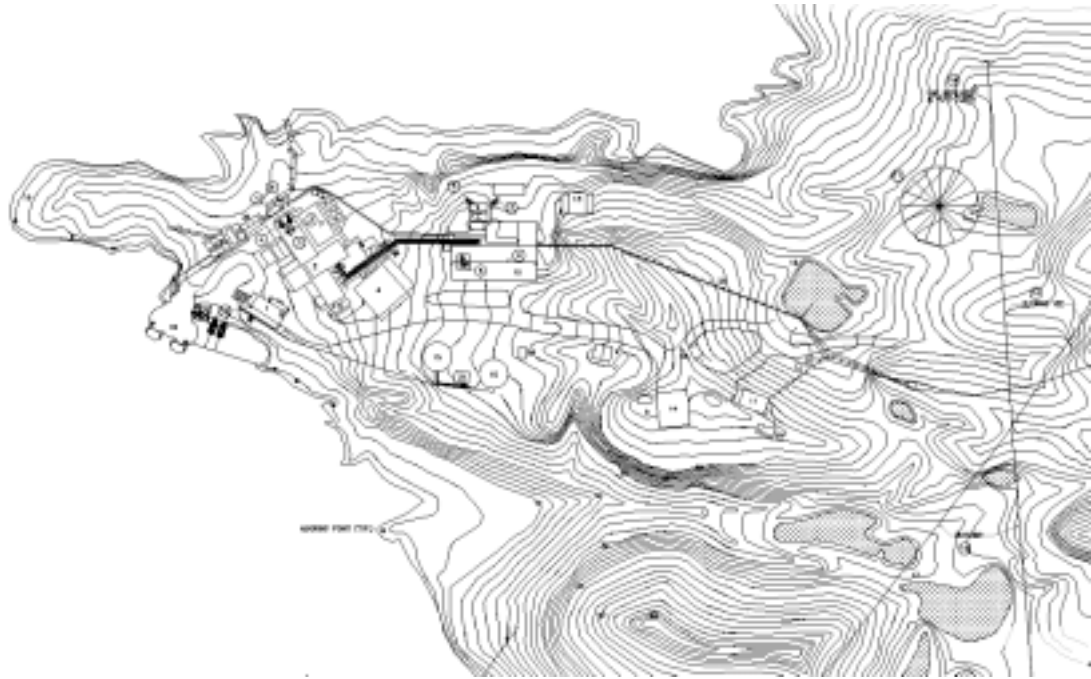
Weather Station Objectives

- Increase frequency of observations
- Provide greater consistency and accuracy over manual observing process
- Reduce manpower requirements
- Upgrade equipment to be consistent with other modern observing systems
- Automate data transmission

System Design Goals

- Observe & record meteorological conditions every minute
- Display data locally (graphically and as text)
- Format data into World Meteorological Organization (WMO) hourly aviation (Code Form FM 15 - METAR) and 3 hourly synoptic and (Code Form FM 12 - SYNOP) weather reporting codes respectively for long-line transmission
- Transmit observations via off-continent satcomm for WMO GTS insertion
- Archive data

Potential Station Locations



Automated Station- Near Term Process

- Used until 24/7 satcomm installed (April 2002)
- Automated station takes, formats, and displays observations
 - METAR every hour
 - SYNOP every 3 hours
- Station personnel radio 6 hourly SYNOPSIS to Rothera as before – no change in data transmission scheme
- 1 year overlap with old station to establish climatological correction factors (per WMO & Nat'l Wx Svc recommendation)
- Data displayed locally
- Automated data archive begins (1 min & formatted obs) – May use WMO Code Form 94 (Binary Universal Form for the Representation of meteorological data - BUFR)

Automated Station-Long Term Process

- After 24/7 satcomm implementation
- Will have internet connectivity
- Exploits NWS FTP to Washington RTH (GTS & AFTN) via NWS Telecommunications Gateway
 - Automated process – no human interaction
 - May accelerate distribution over current system
 - Transmits METAR every hour and SYNOP every 3 hours observations for GTS distribution
 - No more voice radio relay to Rothera
 - SPECI (WMO Code Form 16) may be transmitted in future
- Will transmit 1 minute data daily to archive center (e.g. U. of Wisconsin Antarctic Meteorological Research Center.)

Conclusions

Palmer will receive automated weather station this year

Near term - no significant changes to data distribution (I.e. Rothera link to GTS still used)

Long term – Exploits new satcomm link and internet to automatically insert observations into GTS and AFTN

RECOMMENDATION 8: RPSC will provide PAUC with an updated written description of data provided by PALMOS, covering parameters, formats, and accessibility. RPSC will maintain synoptic sea ice coverage observations.

PA Upgrade, USAP Private Network

During the E-Mail presentation/discussion with Dale Abel, RPSC Manager O&M, it was decided that Brian Stone, Pat Smith, Dave Leger, Tad Day will discuss off-line any email security issues and impacts to USAP IT operations.

Recommendation 9: NSF (Pat Smith)/RPSC (Dale Abel) will draft a plan to better explain to PAUC/grantees the new email policies/network security issues, including a schedule for implementing changes.

Satellite Link

Jim Fox, RPSC IT Supervisor, gave the following Satellite Link presentation:

Palmer SatCom Project

I. Statement of Need

Introduction

Palmer Station, Antarctica, operated by the United States Antarctic Program (USAP), currently relies on the LES-9 satellite for data communications and INMARSAT for voice and facsimile communications. The LES-9 satellite operates at a maximum theoretical rate of 38.4 kbps and is available to the station for two five-hour periods per day. Voice communications over INMARSAT is expensive and limited to a single phone call at any time. The National Science Foundation (NSF) has tasked Raytheon Polar Services (RPSC) to implement a full-time satellite service to provide enhanced connectivity to Palmer Station for voice, Internet, and multimedia services and to unite it with the USAP Private Network.

This document provides the basis of design for the communications link between Palmer Station and the Denver headquarters for Internet access, telephony and fax services, data transfer, and other support considerations for the station.

User Needs

Palmer Station personnel were interviewed for gathering information from a user perspective as to how the provision of a full-time communications link would affect business processes. The overwhelming themes in their responses were the desire for greater bandwidth, the need for a full-time link as opposed to the two five-hour periods of connectivity, and a link with no fades. Table 1 presents the categories of critical service that have been identified, driving the need for a new communications link.

Table 1. Critical Services Benefiting from a Full-Time Communications Link

Category of Need	Comment
Science Applications	<p>Beneficiaries with a full-featured link are:</p> <ul style="list-style-type: none"> ▪ The Comprehensive Test Ban Treaty Organization ▪ Teachers Experiencing Antarctica (TEA) ▪ Grantees and NSF personnel desiring remote access to home institution sites and email systems. They could send files to their home sites for timely data analysis, rather than shipping CDs to find months later that the data is bad. ▪ Grantees may not stay as long on-station if they had remote access to their experiments. ▪ There will be fewer restrictions placed on the types of science projects approved for Palmer if they could send greater volumes of data over the Internet.
Life Cycle Replacement	<ul style="list-style-type: none"> ▪ The LES-9 satellite is due to be retired within two years. This compels a replacement system to be developed.
Operations &	<ul style="list-style-type: none"> ▪ Time consumed by station personnel for administrative

Category of Need	Comment
Maintenance Cost	<p>activities, such as file transfers, would be reduced. Often, file transfers are interrupted by the quality of the LES-9 link and have to be restarted.</p> <ul style="list-style-type: none"> ▪ Operations personnel would benefit from wideband web access to obtain technical assistance and maintenance and repair procedures to keep systems running. ▪ Remote network monitoring from Denver and diagnostics by vendors will increase systems performance.
Real-Time Access	<ul style="list-style-type: none"> ▪ Real-time access to database applications for cargo tracking and resupply will aid Denver troubleshooting. The eventual replacement of these systems may require real-time access to data stored in Denver. ▪ Timely transmission of weather data to the Global Telecom System will change the way weather data is submitted to the World Meteorological Organization. ▪ Real-time access will provide timely Terascan data to the Lawrence M. Gould instead of transferring files through Denver. ▪ Life, health, and safety are a requirement, driven by the implementation of telemedicine at all stations. ▪ Multimedia services, such as video teleconferencing would bring Palmer Station activities more visibility in the science community.
Business Processes	<ul style="list-style-type: none"> ▪ Currently, no large email attachments are allowed by policy. This operational hindrance would be eliminated. ▪ Simultaneous telephone calls from the station any time of day will offer more flexibility to station personnel for business and personal calls. Use of this system will reduce the usage of INMARSAT at per/minute rates. ▪ When the resupply vessel is in port, their personnel use the station's services for CONUS calls, which would otherwise be accomplished on the ship's INMARSAT system. ▪ Operations personnel would use Internet access to download large files, such as security patches instead of receiving disks, usually months after their need is apparent.

Table 2 contains projected usage of the full-time link averaged on a daily basis. These estimates are based on usage rates cited by grantees and operations personnel. Data traffic was estimated for a weekly period and averaged at a daily rate in the table. This equates to approximately 60 kbs over a 24-hour period. Obviously, there will be higher peak rates required during working hours.

The data in Table 2 is estimated in the outbound direction. If the needs in Table 1 are to be met, the inbound data rate may be similar.

Table 2. **Summary of Projected Average Daily Traffic**

Category	Mb/day	Comment
Science	1,459	S-Event data transfers
Operations	3,743	Email, VoIP, Telemedicine, Video Conferencing, Weather and Operational Data, File transfers
Total	5,202	

Table 3 contains a projected instantaneous maximum data usage for inbound and outbound traffic, based on a probable scenario of the largest uses of bandwidth. An expected method of operation is the use of video teleconferencing equipment for telemedicine or conferencing, coupled with the use of some VoIP telephones. The values in the table do not consider IP overhead.

Table 3. **Projected Instantaneous Maximum Traffic**

Kb/sec		
Category		Comment
Telemedicine	384	Video conferencing is the highest single bandwidth user
VoIP	36	Assuming the use of 3 IP telephones simultaneously
Total	420	

System Description

To ensure an uninterrupted communications link between Palmer Station and CONUS, the Palmer Station ground station and the CONUS teleport should be designed for high reliability. Based on the growth of data usage over the communications link, the end-to-end system should be capable of expansion to T-1 traffic so that future needs may be met.

Ground Station

Given the congestion on Atlantic Ocean region satellites and the possibility of having space segment service on a different satellite in the future, the Palmer Station ground station should be designed for operation with any satellite co-visible with a CONUS teleport. This ensures that communications service be available to Palmer Station, regardless of the provider and satellite used. The ground station should be designed so that minimal changes are required for future operational scenarios where other providers are used.

A monitor and control system should be an essential part of the system configuration to record and notify personnel in the event of an equipment failure or occurrence not expected in the normal operation of the ground station. Dedicated personnel will not be continually monitoring the operation of the system. Where practical, using off-the-shelf equipment, in the event of an equipment failure, the system should switch to a standby piece of equipment so that no interruption of service is encountered.

CONUS Teleport

A service provider will be contracted to supply space segment and CONUS teleport services. Operation and maintenance of this segment should be the responsibility of the provider. They should provide the required bandwidth to support the data traffic of the station with the potential for growth.

CONUS Tail Circuits

The Palmer Station network should be integrated into the USAP Private Network utilizing connectivity between the CONUS teleport and the Denver Network Operations Center. This connectivity should be supplied through services of the NASA CSOC. This reduces the maintenance and support required by RPSC.

Operational Environment

In order to ensure that the Palmer Station ground station performs to specifications, it must endure the harsh environment of the Antarctic environment, while consuming as little energy as practical. Consideration should be given to the power generation capability of the station. A suitable location should be selected for the ground station so that environmental policies are complied with.

Systems Operations & Maintenance

Operations and Maintenance personnel at Palmer Station should be trained in all procedures for operation and servicing of the ground station equipment. Annual training must be available from the vendor for attendance by seasonal personnel for the life of the system. Due to the turnover rate of seasonal personnel, the system maintenance requirements should be minimized.

The system should be well documented for Operations and Maintenance personnel to keep the system properly performing.

System Configuration

To simplify maintenance and repair of the Palmer Station ground station; parts and vendor support must readily be available. In order to achieve this, standard, commercial, off-the-shelf equipment should be utilized in the assembly of this system. Availability of parts and service must be guaranteed for the expected life of the system.

Schedule

The schedule for implementation of this system must coordinate with the logistics and shipping schedules for Palmer Station. Additionally, for deployment of the installation crew, berthing spaces on a resupply vessel and the station will have to be allocated. The implementation of the ground station at Palmer Station must not impact the mission of the station.

Summary

With the implementation of a full-time satellite link between Palmer Station and the USAP Private Network, enhanced services will improve the quality of science endeavors and the operational support for the station. Critical operational concepts that would advance science were identified; replacement of the LES-9 satellite link, the streamlining of operations and maintenance processes, real-time access to the Internet, and business processes realignment. All of these needs require greater bandwidth than currently available at Palmer Station.

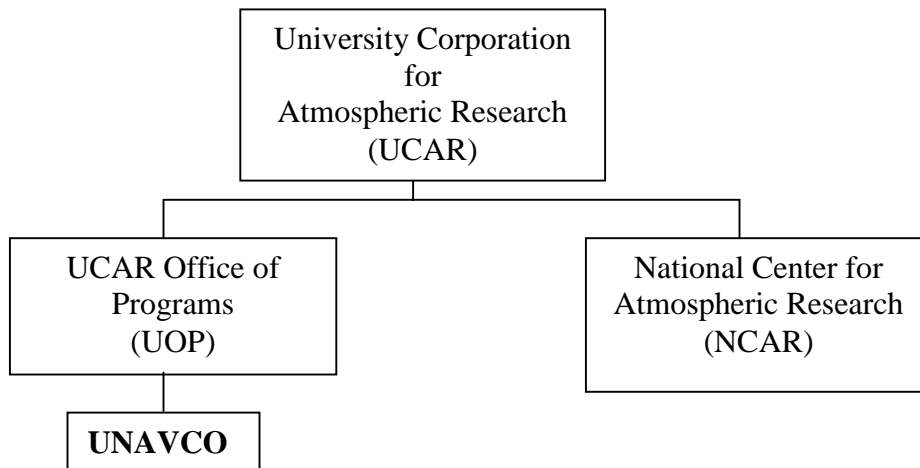
UNAVCO GPS Support

Chuck Kurnik presented the following and noted that his presentation informational and is meant to promote Palmer Station GPS opportunities. He also noted that, because there is no UNAVCO representation at Palmer Station, grantees could visit the Boulder location for training if necessary or desired.

GPS and Its Application in Antarctica

What is UNAVCO?

- (University NAVSTAR Consortium)
- What is GPS?
- USAP Projects supported by UNAVCO



UNAVCO Funding

- NSF - EAR (Earth Sciences) primarily
- NASA - SENH (Solid Earth and Natural Hazards)
- NASA - GGN (Global GPS Network)

Services Provided by UNAVCO

- Pool of GPS equipment
- Technical Support: Training, Field
- Data Archiving
- Research and Development

SuomiNet

- Sense atmospheric water vapor in near-real-time using GPS
- Over 100 universities
- Entire network remotely configurable

Hand Held Units

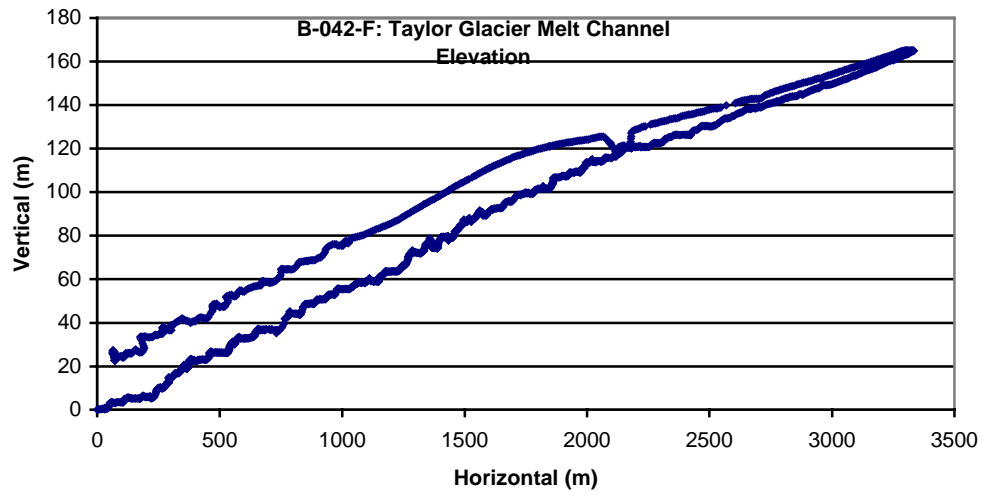
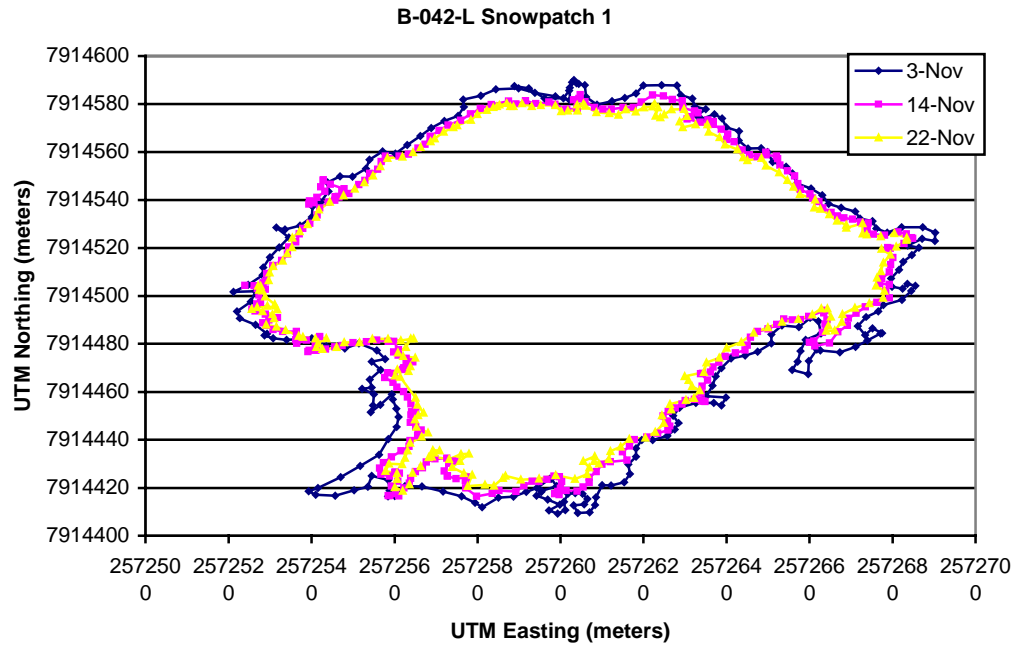
- Accuracy = 3 to 5 meters
- Good for navigating to a spot

Dual Frequency Receivers

- Uses external antenna
- Accuracy can be millimeter-level

Types of GPS Surveys

- | | |
|--------------------------|--|
| • Static - | Sub-cm precision, long baselines, long occupations |
| • Rapid Static - | cm precision, short baselines, short occupations |
| • Kinematic - | cm precision, short baseline, very short occupations |
| • Continuous Kinematic - | decimeter precision on each epoch |
| • Real-Time - | cm or meter precision, requires telemetry |



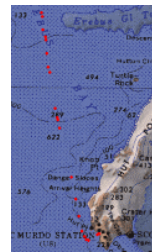
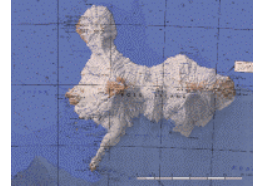


Palmer GIS

Kelly Brunt, RPSC IT System Analyst, presented information and an overview of the Geographic Information Systems (GIS) available at McMurdo Station and at Palmer Station. The GIS program includes a new workstation, ArcInfo software, and a variety of base maps.. (note: McMurdo Station information is available in the MAUC Meeting report dated May 31, 2001) The Palmer Station GIS information follows.

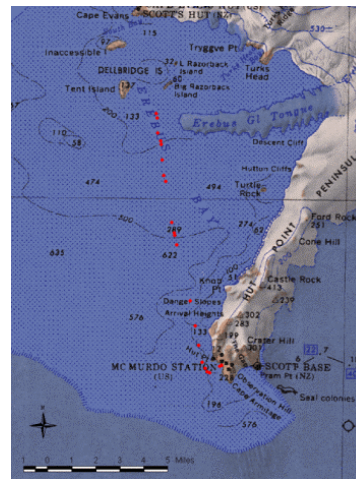
Program Overview Typical GIS Requests

- Scientists request maps prior to doing field work
 - Window base data
 - Hardcopy of maps
- Scientists request maps with their GPS data
 - Add Garmin or Trimble GPS data to base data



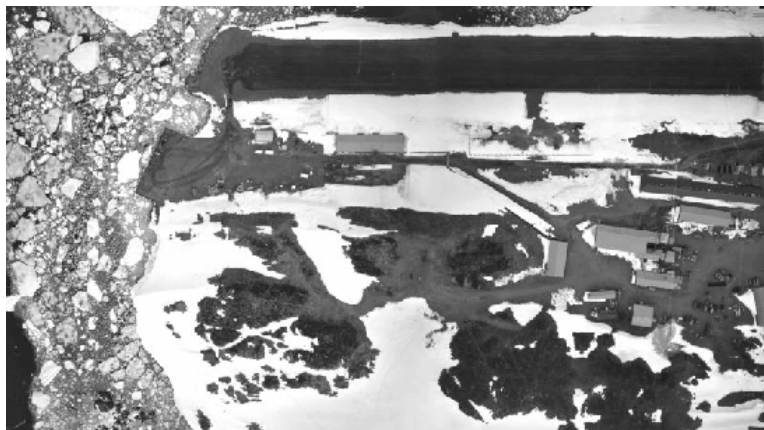
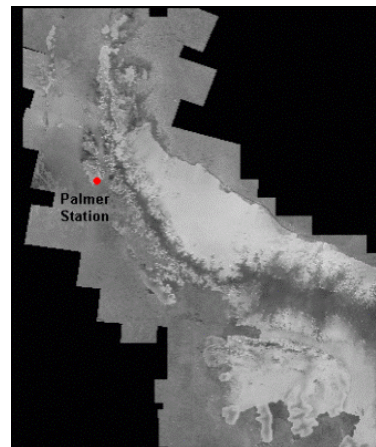
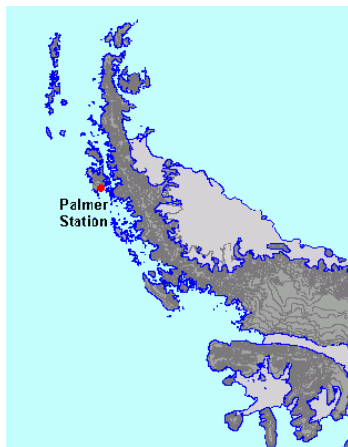
Typical GIS Requests

IDNT	LATITUDE	LONGITUDE	DESCRIPTION
W EGT000	S7750.93213	E16639.65543	TOP OF RAMP
W EGT005	S7750.98387	E16639.34161	SKIDOO PARK
W EGT010	S7751.21120	E16637.57843	TURN
W EGT015	S7751.18255	E16637.19832	TURN
W EGT020	S7751.04898	E16636.78793	SLIGHT TURN
W EGT025	S7750.84233	E16636.29193	TURN
W EGT030	S7750.23466	E16635.71355	CRACK X
W EGT035	S7749.51787	E16635.04761	
W EGT040	S7748.64658	E16634.13770	PRESSURE RIDGE
W EGT045	S7746.63556	E16631.73530	ICEBERG PULLOFF
W EGT050	S7746.28183	E16631.38575	TURN TO PENGUIN RANCH
W EGT055	S7746.19010	E16631.29177	TURN TO TURTLE ROCK
W EGT065	S7745.81383	E16630.87108	TURN
W EGT070	S7744.34613	E16629.82213	TURN
W EGT075	S7744.14755	E16629.47580	PRESSURE RIDGE
W EGT080	S7743.58815	E16629.20512	TURN TO CAVES
W EGT085	S7743.02005	E16628.97370	TURN
W EGT090	S7742.90643	E16628.87328	TURN
W EGT095	S7742.60773	E16628.36505	PRESSURE RIDGE
W EGT100	S7742.06508	E16628.23050	CRACK
W EGT105	S7741.90737	E16628.12140	CRACK



50 Clicks →

- Kiosk or GIS Workstation
 - ArcView GIS
 - Base data
 - ArcView Project files
 - Documentation
 - Waypoint+
 - Internal CD burner
- Palmer Station base data
 - Antarctic Digital Database
 - Canadian Space Agency/AK SAR facility RADARSAT (125 meter resolution)
 - USGS High Resolution Orthophotos (Richard Sanchez's data)



Rothera Station Photo from BAS web site

- Support
 - Documentation for ArcView beginner user
 - Support and access to base data for advanced users
 - Kelly.brunt@usap.gov bruntke@mcmurdo.gov
 - Palmer Station Science Technician:
 - SciTech has documentation to rebuild machine
 - SciTech has been a GIS enthusiast in the past
 - SciTech might be conned into assisting scientists
 - But SciTech can defer questions to e-mail or documents

RECOMMENDATION 10: PAUC (Tad Day) will solicit the science community to help determine how the GIS might best be used at Palmer Station, i.e. boating navigation, safety, field work, etc. This information will assist Kelly Brunt (RPSC) in providing GIS products and applications at Palmer, including a chairperson.

Ultraviolet (UV) Monitoring

Rocky Booth, Biospherical, Inc., presented the NSF survey and discussed the UV monitoring activities over the past year and the plans for next season. PAUC members are referred to Biospherical Instruments Inc. web site for more detail on the six network sites including Palmer Station and McMurdo Station. (www.biospherical.com)

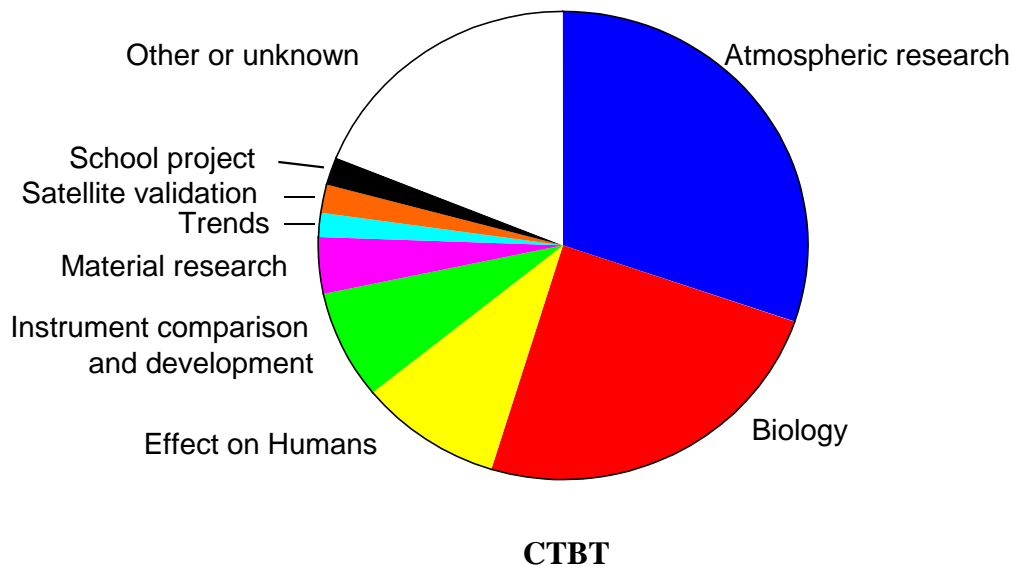
Recommendation 11: Biospherical, Inc. (Rocky Booth) will provide PAUC with an update on availability of data/services from the UV monitoring network by September 1, 2001. PAUC (Tad Day) will distribute update to the science community.

Results from NSF-UV Survey

- 11 people filled out the questionnaire
- Interests:
 - Radiative transfer model validation
 - Effect on humans
 - Validation of UV-Index calculations
 - UV climatology
 - Antarctic bio-optics
 - Biological effects of changing UV
- Suggestions:
 - Distinction between diffuse and direct radiation; e.g. GUV equipped with shadowband
 - Aerosol optical depths in the UV and visible
 - Spectral reflectance data for snow-covered sites / surface albedo information
 - NO₂ data
 - Better time resolution and cloud information
 - Online data availability
 - Higher spectral resolution in Database 2
 - Uncertainty information at short wavelengths
 - Keep ozone and weather information
 - Keep dissemination of data via CD-ROM in addition to online access

Interests in NSF UV Network Data

- 42 people registered between Sep 2000 and May 2001 to access NSF data online
- 7 people ordered CD-ROMS and hard copies of Operations Reports



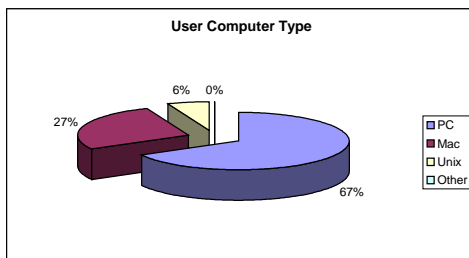
Don Atwood, RPSC Director Science Support, noted there was nothing to report regarding CTBT at Palmer Station as this has been put on hold by the NSF at this time.

Electronic Support Plan (ESP)

Katie Kish, RPSC Project Lead ESP, presented the following.

- **ESP is On-line!**
 - **Supporting the 2001-2002 SIPs for all Stations/Vessels**
 - **Supporting the 2001 ORWs**
 - **Will support the 2001-2002 RSPs**
- **ESP supports almost any User**
 - **Only two individuals have not been able to complete ESP worksheets over the course of three years**
- **ESP Worksheets deployed 2001**
 - **125 SIPs**

ESP Users' Computer Profile



- **Comments**
 - “... I must say that having downloaded the ESP today and filled it out electronically, I was amazed at how much easier it was than by pen on paper. The ESP effort has produced a remarkable improvement to the old method of providing logistics information.” - *Robert Bindschadler*
 - “I love the way the "ESP" system... it is a very very good system, by the way.” - *Doug MacAyeal*
 - “I just wanted to take a moment to congratulate you all on your work with ESP. To date the system has been hassle free for me. Once I moved passed the "learning curve" of getting started, I am finding the SIP's easy to locate, quick to navigate
 - “The difficulty lies really in the interface..... specifically the "dialog box" style input screens.”
 - “Another problem with this shell; there's no apparent way for the user to get either a hard copy or file version of their completed work” - *Ralph Harvey*
 - “When entering a new piece of cargo, you have a list in a scrolling window. to enter a new piece, you click the "new" button. the list scrolls all the way to the top and you have to scroll all the way back down to get to the blank line that was just added at the bottom of the list.”
- **Possible features for Next Release**
 - Enhanced printing capabilities
 - SIP to SIP copy functionality
 - Additional text fields where necessary
 - SIP Distribution
 - Ad-hoc Reporting subsystem
 - Web-based architecture?

PAUC Business

PAUC members discussed the upcoming election of new members, nominations were solicited from the floor. In order to balance out PAUC member rotations, one current member was needed to volunteer for an additional year of service, and another was needed to volunteer for an additional two years service on PAUC. Volunteers were asked solicited at the meeting. Tad Day volunteered to serve as PAUC ex-officio member for one year and Bruce Sidell volunteered to serve another two years as PAUC member. This resulted in only three vacancies needing to be filled. (Drs. Manahan, Crockett, Jeffrey terms expire 30 September 2001).

Recommendation 12: PAUC Chair (Tad Day) will solicit nominations for new members to replace those with expiring terms. Tad Day will continue as ex-officio member, Bruce Sidell will continue as active member for two more years. Tad Day will conduct electronic balloting and report election results to PAUC/RPSC/NSF for three new PAUC members, including a chairperson.

PAUC chair and members will encourage grantees to submit their Operational Requirement Worksheets (ORW) in a timely manner when proposals are submitted.

NSF Dennis Peacock

Dennis Peacock, on behalf of the NSF, thanked PAUC members for their help over the last year and noted that the infrastructure- facilities, transportation, etc. – have seen more upgrades this last year than ever before. PAUC and other scientists have been helpful with suggestions. The NSF Science Board, as mentioned by Dr. Erb yesterday, has asked what might be needed in the Palmer Station area. The Palmer Station area workboat again was mentioned as an item that might be a good recommendation for the Science Board's consideration.

Dennis noted some main issues that occurred this last year and that are continuing into the next year:

- the budget from Congress is low and extra funds do not appear to be available
- we are fully electronic with proposals
- as there has been a decline in response for SIPs, it will be helpful if PAUC members encourage other grantees to submit OWRs and SIPS in a timely manner
- Astro physics phasing out at South Pole but is being replaced

Overall, Dennis is optimistic.

PAUC Chair and members will encourage grantees to submit their Operational Requirement Worksheets (ORW) in a timely manner when proposals are submitted.

Dennis and Don Atwood reported that the ESP staff resigned and that Don is working with Steve Toft, Director IT, for a transition plan that will allow ESP to continue uninterrupted.

Laboratory Safety

Ken Doggett, RPSC Senior Analytical Chemist, began by noting that laboratory safety is not an issue, rather his presentation was informational. The NSF tasks contractors to maintain safe laboratory environments. The Program builds on participants' knowledge and there is a three tiered effort to inform participants of appropriate conduct. These are: NSF tasking letter, Laboratory Code of Conduct (COC page 48) and the Users' Manuals.

Laboratory Code of Conduct

- Short, two to three-page venue-specific document
- Details appropriate conduct to maintain safe lab environment
- Codes of Conduct (COC) provided for each station, research vessel and camp environment
- Users' committees asked to review each COC
- Palmer area COCs are ready for review

Provide comments back to Rob Edwards by 22 June

Users' Manuals (Users' Manuals are available on site for review when convenient)

- Provide greater detail regarding all aspects of laboratory usage, including chemical hygiene plan and other information.
- Are currently under revision for Palmer
- Will be written for the vessels
- Users' committees may comment on content and scope

Please let Rob Edwards know if you are interested in commenting on the Palmer manual

RECOMMENDATION 13: PAUC will review the Draft Code of Conduct and submit any changes/suggestions to RPSC (Rob Edwards/Ken Doggett) by June 22, 2001 for consideration when RPSC finalizes the COC.

Capital Equipment

Howard Tobin, RPSC Senior Instrument Technician, presented the Capital Equipment status report.

Palmer Station Capital Equipment Acquisitions during the last three years:

Nikon E800 Research Grade Microscope with EPI-fluorescence, phase contrast and DIC capabilities

SONY DXC-390 CCD Color Video Camera attachment for the Nikon E800 Microscope

Agilent 1100 HPLC with extensive inventory of spare parts

Gilson FC204 Automated Fraction Collector, adding additional versatility to the HPLC

SPEX Fluoromax-2 scanning Spectrofluorometer with DNA quantification capability

Perkin-Elmer Lambda 40 UV-VIS Spectrophotometer

Hewlett-Packard 8453 UV-VIS Spectrophotometer

Savant AES290 Integrated Speedvac System

Chelsea Fast Repetition Rate Fluorometer

PAUC Requested Equipment for 01-02 Season

Liquid Chromatography

Agilent 1100 System - \$22,000 to \$36,000

Amersham Pharmacia AKTA FPLC - \$32,000 to \$47,000

Denaturing Gradient Cell Electrophoresis (DGGE)

Bio Rad D-Code System - \$4,400 to \$6,600

60X DIC Objective for the Nikon E-800 EPI-Fluorescence Microscope - \$5,200

Equipment in Need of Replacement

REVCO Ultra-Low Temperature Upright Freezer, -50 to -86C, - \$12,000

Beckman High Performance Centrifuge, Model J20-XP (replaces J2-M1) -\$29,500

Howard noted that the Palmer Station capital equipment items are in a “general upgrade” mode and PAUC was asked if they want to focus on replacement/maintenance or if prioritization of new items needs to be done.

RECOMMENDATION 14: PAUC (Tad Day) will solicit from PAUC and the science community additional recommendations for capital equipment items and conduct a ballot to prioritize the list.

Brien Borden and Rob Edwards will investigate the integrity of dry shippers and will look into new, improved shippers. Tad Day will solicit suggestions/input from the science community. Dry Shipper Advisory appears on page 39.

Field Services for Palmer Research Projects

Rob Edwards reported on the following changes:

A new Palmer Station Boating Coordinator, Jeff Bechtel, has been hired and will report to Steve Dunbar, RPSC Manager Field Services.

The Diving SOP will be reviewed by Rob Robbins after the SIP review- late April (Chuck Amsler will review the Diving SOP and will work with Raytheon/Rob Robbins to finalize the document) Rob Edwards will complete the Boating SOP, with assistance from Bill Fraser by mid-August.

RECOMMENDATION 15: PAUC (Chuck Amsler) will review the Diving SOP draft and will work with Rob Robbins, Diving Coordinator RPSC, in the completion of the final SOP.

RECOMMENDATION 16: RPSC (Rob Edwards) will complete additions to the Boating Regulations with review from the PAUC (Bill Fraser). The Boating SOPs will be finalized by mid-August and in place for 2001-2002 season start.

Steve Dunbar brought a sample jacket for PAUC's consideration. Brian Stone, NSF Research Support Manager, noted that the NSF provides basic clothing for grantees and employees. However, if specialized gear, clothing is required by the grantees, these types of requests should be in the SIP.

If there are special field food requests, these should be a part of the SIP process as well.

RECOMMENDATION 17: PAUC (Bill Fraser) will solicit from the science community ideas/suggestions on the most appropriate jacket colors for work in the field. Survey results will be provided to RPSC.

Crane, Food Service, Bedding

Ron Nugent, RPSC Area Manager Palmer Station, in his presentation of crane options being considered for the Palmer Station pier, noted that RPSC is continuing to work with NSF (Frank Brier) in determining the best, most viable option for a pier crane. Rocky Booth will provide information regarding the Scripps hoist/pulley equipment to Ron Nugent for his use in developing crane options. Ron Nugent will provide Frank Brier with the Scripps hoist/pulley system information for consideration and any other options.

RECOMMENDATION 18: RPSC will continue to work with the NSF on crane options for Palmer Station. The NSF and RPSC renovation teams will have more information following the Palmer Station site visit in June 2001.

Station/Vessel/ECO Interaction and Workboat

Al Hickey, RPSC Marine Superintendent reported that Station/Vessel/ECO interactions have improved since the implementation of the *Interaction of USAP Research Vessels and Research Stations* document. (The document drafted by Bruce Sidell with input from a PAUC working group was approved by ARVOC and PAUC and appears in the June 19, 20, 2000 PAUC minutes or is available from Rob Edwards)

Port calls have gone smoothly over the last year, per Al Hickey. Al Sutherland noted that ships' schedules do pose some problems due to being heavily subscribed. However, the NSF, the RPSC Marine Division, and Palmer Station Operations work closely to resolve any scheduling issues.

The “general use and recreational supplies” at Palmer Station were discussed briefly during this section. It was noted that some general supplies may need to be replaced or inventory increased.

RECOMMENDATION 19: PAUC (Tad Day) will provide a list of recommended items (general use and recreational items) for possible acquisition as inventory stock at Palmer Station. RPSC (Rob Edwards) will assess the current supplies (e.g., sewing supplies) on station and may re-supply some items before season start.

May 31 and June 01 2001
Attendance

Committee Members Attending:

Dr. Thomas (Tad) Day, Chair (Arizona State University)
Dr. Wade Jeffrey (University of West Florida)
Dr. Bruce Sidell (University of Maine)
Dr. Karen Baker (U. of Ca., San Diego)
Dr. Charles Booth (Biospherical Instruments, Inc.)
Dr. Lisa Crockett (Ohio University)

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Other Palmer Area Grantees Attending:

Dr. Charles Amsler (University of Alabama, Birmingham)

amsler@uab.edu

National Science Foundation

Dr. Scott Borg
Mr. Dave Bresnahan
Mr. Frank Brier
Dr. Karl Erb
Mr. Dwight Fisher
Dr. Harry Mahar
Dr. Dennis Peacock
Dr. Polly Penhale
Mr. Patrick Smith
Mr. Brian Stone
Mr. Al Sutherland

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bstone@nsf.gov
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Raytheon Polar Services Company

Dr. Don Atwood
Mr. Rob Edwards
Mr. Al Hickey
Mr. Dave Leger
Mr. Steve Meredith
Mr. Ken Navarro
Mr. Ron Nugent
Ms. Dawn Scarboro
Ms. Kelly Brunt
Ms. Cara Sucher
Mr. Tom Yelvington
Mr. Brian Borden
Mr. Steve Frost
Ms. Lynn Dormand
Mr. Bob Farrell
Mr. Ken Doggett
Mr. Rob Robbins
Mr. Dale Abel
Mr. Nick Powell

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Other: Mr. Charles Kurnik

UNAVCO

CODE OF CONDUCT FOR PALMER STATION LABORATORIES

Welcome to the Palmer Station Laboratories. In order to make your experience here both productive and safe, we would like to provide you with the following Laboratory Code of Conduct as approved by the NSF-OPP. Please keep in mind that certain health, safety and environmental considerations which apply to your work here may differ from those of your home institution. Your awareness of these considerations and cooperation in adhering to these important guidelines will help provide for a safe and productive laboratory environment in which to accomplish your research objectives.

Laboratory Safety

Each individual working in the laboratories is primarily responsible for his or her own safety. Additionally, individuals must consider the impact of their actions on all members of the community. The extraordinary circumstances under which we all work and live demand extraordinary caution in our activities in the laboratory and throughout the Station. *Please consider that dangerous behavior not only puts you at risk, but also risks the safety of those who have to treat or rescue you.*

USAP laboratory activities are guided by OSHA standards as per Code of Federal Regulations 29 CFR 1910 Section 1D, dated 31 January 1990. Adherence to these standards should be second nature to experienced laboratory workers. If you have any questions or concerns, please ask your Principal Investigator, field team leader, or the Laboratory Supervisor for advice or help in locating resources. For your own safety, the following standards deserve special emphasis.

The USAP expects you to be proactive in avoiding accidents and injuries from inadvertent exposure to harmful chemicals. Therefore, you must wear appropriate clothing, including long pants and closed-toe shoes, when working in laboratory areas. (This policy does not apply to individuals who are just passing through the area. However, those individuals should be cognizant of chemical use and be cautious when passing through the area.) You are not allowed to smoke in any laboratory area at any time. You may not consume nor store any food or beverages, whether opened or contained, in any laboratory area at any time. You must not use laboratory refrigerators and freezers to store anything other than laboratory materials.

If you work with hazardous materials, the USAP requires you to know and use the procedures for properly handling the materials you are using. You are also required to wear and use appropriate personal protective equipment.

Additionally, due to the unique conditions of working at Palmer Station, the following guidelines are presented

You should only store in the laboratories the minimum amount of hazardous materials necessary to conduct the day-to-day activities of your research. Benchtop amounts should be restricted to less than 4 liters or 4 kg at any time. Use appropriate storage cabinets.

Laboratory procedures utilizing volatile chemicals must occur in a fume hood or with proper ventilation.

All experiments and procedures must be attended unless they are failsafe. Notify others of your work plans, especially if working after hours or alone.

All reagents, containers and samples in the laboratories' refrigerators, cold rooms and freezers must be properly marked and dated with their contents. Unmarked or mislabeled bottles represent an unacceptable hazard to others.

Because of the proximity between the laboratories and the remainder of station facilities, it is inevitable that non-research personnel will pass through or near your experiments. Each investigator has the right to limit access to those priority areas that contain sensitive experimental equipment. Please inform the Laboratory Supervisor of these areas so that station personnel can be notified.

Laboratory procedures may only occur in laboratory areas, and are not allowed in common use areas such as the galley/dining hall.

Report any laboratory accident or incident to the Laboratory Supervisor.

Waste Handling

All USAP participants have a unique responsibility as stewards of the Antarctic environment.

You may not discharge down the drain or release into the Antarctic environment any laboratory wastes.

Most wastes generated in the laboratory are considered Antarctic Hazardous waste. Please carefully review the "Proper Disposal of Hazardous and Radioactive Waste" protocols outlined in your Laboratory Orientation or Laboratory Users Manual. You will receive further instructions on hazardous and radioactive waste protocols from the Laboratory Supervisor as appropriate for your project. Please also consider ways to reduce wastes in your laboratory procedures.

Conservation

As with all of the station facilities, the conservation of water, electrical power, and general supplies is essential. When designing your research protocols, please make an effort to conserve these resources.

NOTE: These rules are not all-inclusive. They are meant to be guidelines for you to follow in order to operate in a safe manner. We expect you to use a conservative approach and common sense in your field and laboratory endeavors while you are in the Antarctic. Please do not hesitate to contact RPSC laboratory personnel or your NSF Program Manager should you have any questions about this "Code of Conduct".

DRY SHIPPERS AND YOU!

The FAA has issued an advisory bulletin to alert air carriers to the hazards associated with mishandling authorized packagings utilizing liquid nitrogen as a refrigerant. These packagings are “non-pressurized” specially designed flasks known as “dry shippers”, which are used to transport frozen samples or products. The closure of the container is designed to allow venting to the atmosphere, through the fill opening, in order to prevent the build up pressure within the package. Dry shippers are designed to be transported in an “upright” position at all times. Dry shippers can leak liquid nitrogen through the venting system when handled adversely to the orientation markings and package design. Dry shippers when properly prepared (IATA and ICAO, packaging paragraph 202), are not subject to regulations. However, if the dry shippers were offered with free liquid nitrogen present, they would be deemed hazardous and subject to regulations for transportation by aircraft. The interior of the packaging contains a cylindrical void, which holds the material requiring refrigeration, surrounded by absorbent material. The absorbent material is saturated with the liquid nitrogen. The FAA has discovered shipments where the nitrogen is not completely absorbed (overfilled), thus when mishandled results in a release of liquid nitrogen. The FAA will actively pursue the enforcement actions against all parties who violate ICAO Technical Instructions. Violators are subject to civil penalties of \$27,500 and criminal prosecution with penalties of \$250,000 and up to five years in prison.

Dry shippers are commonly used by grantees in the USAP to handcarry or ship frozen samples to and from Antarctica. RPSC discourages the use of the dry shipper due to unreliability and commercial air transport challenges. IATA Dangerous Goods Regulations states, (Section 2, paragraph 2.3.4), that dry shippers are permitted on the aircraft as checked or carry-on baggage **with** operator’s approval. IATA also states (Section 9, Paragraph 9.0) that the operator or airline has the right to decline a dry shipper for transport or can impose more restrictions on the shipment to ensure aircraft safety. For example, it is possible for United Airlines to accept a dry shipper in Christchurch for transport to Los Angeles. However, if the grantee switches airlines in Los Angeles, it’s a high risk that the second airline will reject the shipment. Thus leaving the grantee and dry shipper stranded in Los Angeles; placing the research project in peril.

If utilizing a dry shipper is unavoidable, please adhere to the following requirements and guidelines to minimize the risk of samples being delayed or confiscated:

- Ensure integrity of dry shipper is not compromised or damaged; meets all packaging requirements per IATA and ICAO; Packaging Instructions 202.
- Grantee formally notifies airline and receives airline approval to transport dry shipper prior to check-in / boarding time, per IATA, Section 2; table 2.3.A.
- Dry shipper offered for transport is void of any free liquid nitrogen.
- Dry shipper is marked with “up” arrows, “Keep Upright”, “Do Not Drop” and “NON-regulated Substance”.
- Label dry shipper with consignee and consignor addresses.

- Grantee should carry on their person and / or attach IATA documentation (Section 5; Packaging Instructions 202; page 292) to package permitting non-regulated transport of dry shipper. RPSC can provide a copy of this documentation to grantees.

Unfortunately, airlines have incurred hefty fines and are very cautious about accepting dry shippers for transport. As customers, we cannot dictate to the airlines what they can and cannot take on the aircraft. Several USAP participants using dry shippers have encountered problems with airlines. The best advice for anyone wishing to handcarry frozen samples or products is, **use dry ice**. Dry ice is not regulated, provided the quantity doesn't exceed 2 kg per person **and** proper packaging is used. For further questions, please contact Joni English, RPSC Hazardous Cargo Specialist; 303-790-8606 ext. 3229; e-mail: joni.english@usap.gov .

Regards,
Joni English
Hazardous Cargo Specialist, RPSC
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