

ANTARCTIC RESEARCH VESSEL OVERSIGHT COMMITTEE

**ARVOC
MEETING
DECEMBER 10, 11, 2008
ARLINGTON, VA**

These proceedings were compiled and produced by
Raytheon Polar Services Company
7400 South Tucson Way
Centennial, CO 80112
For further information or to make comments contact:
Dan Herlihy at 720-568-2431 or dan.herlihy@usap.gov

Executive Summary

December 10 and 11, 2008 ARVOC Meeting

The committee recognizes need for a long-term, holistic strategy for ocean sciences if the US is to maintain a leading role in polar marine science. This is especially critical given the dramatic and unprecedented climatic changes that are occurring in the Antarctic Peninsula region and the resulting ecological and glaciological response to these rapid changes. The US program is unique in that it currently operates the only marine biological station in the peninsula region (hereby defined as extending from the northern tip of the peninsula to Marguerite Bay) where biochemical and physiological research is possible. Palmer Station is strategically located for this research. Without suitable vessel support, the US surrenders its leadership in field-based marine biology, population studies, and sea-ice biology. The loss of the ARSV also removes significant capability for moving scientists around within the field and supporting remote field parties, and for oceanographic investigations in the Drake Passage, Scotia Sea and Bransfield Strait.

Prior to the meeting the committee attempted to solicit input from other scientists. There were a number of scientists who cited the importance of regular (year round) time series and other recurring data collection efforts (LTER, Drake CO₂, XBT etc), which will be most impacted by the absence of the ARSV Laurence M. Gould (LMG). There is also strong feeling that consistency is essential for any time series analysis and that the LMG and the support of Raytheon Polar Services have provided an ideal means to obtain that consistency. It is noteworthy that a number of these comments came from scientists not directly associated with these programs. Virtually every respondent noted the fact that this reduced capability comes at a time when climate-related research is desperately needed.

The committee discussed a number of options available to NSF to help reduce the impact on science. These include the following:

1. International Collaboration (sharing vessels)

NSF should do more to encourage partnering with other countries that have research vessels operating in the peninsula region for cargo ops and transportation of support personnel and scientist to and from Palmer Station and around the field. A number of countries have stations in the peninsula that do routine re-supply and several countries have new vessels that will come on line soon. This includes Brazil and Korea. NSF should also encourage scientists to be more proactive in collaborating with scientists from other countries for shared vessel time. The British Antarctic Survey has been most active in the peninsula region and their operating style is closest to that of the US.

2. UNOLS vessels

The committee is concerned that, because of their limited access to sea ice-covered waters, UNOLS vessels can only be used for open water programs, although there will continue to be a need for such programs. The UNOLS fleet does include one ice-strengthened vessel, the R/V Langseth, but that vessel is mainly suitable for geophysical research and would be a costly alternative to the LMG, unless a reduced daily rate could be

negotiated. The R/V Knorr does have an ice-strengthened bow. One of the concerns about UNOLS vessels is that their crews and science support staffs are not used to working in polar conditions.

3. Commercial ships and Tour ships

The committee had little data on commercial vessels. However, it is generally felt that such vessels would be useful only for re-supply and transfer of personnel. Tour ships could be used to transport scientist to and from Palmer Station, but this is considered a minor offset to the overall transportation requirement.

4. Increased air support

Limited discussion was focused on this topic as it was generally felt that increased air support would help only in moving people to and from Palmer Station and in and out of remote field stations.

5. Bi-polar vessel operations

The committee discussed having the USCGC Healy and R/V Nathaniel B. Palmer (NBP) transit back and forth between the Arctic and Antarctic, at least during some years. However, the current limited (180 day) operating window for the Healy does not allow this flexibility and there is going to be increased demand on the NBP when the LMG is no longer in service.

6. Greater use of the Swedish AC Icebreaker ODEN

Limited discussion focused on relying more on the ODEN for re-supply, personnel transfer and science. This seems like a viable option that warrants further consideration. Before this can happen, issues with restricted deck space will need to be resolved. Having the science time following the McMurdo break-in would help in this regard.

7. Purchase the ARSV Laurence M. Gould

The committee devoted considerable time to discussion of the option of purchasing the LMG and placing it within the UNOLS fleet. The discussion initiated when we learned that the LMG could be purchased for 20 million dollars. The UNOLS transfer would help reduce some of the issues with crewing the ship and costs while tied at the dock. This is dependent on getting the money needed for the purchase and on UNOLS agreeing to the deal. Some committee members pointed out that the LMG is actually not the ideal ship for the job.

8. Increased reliance on autonomous vehicles.

There is currently great progress being made in the area of autonomous vehicle development and use in oceanographic and atmospheric research. In particular, gliders and drifters could be useful in the peninsula region. However, the field is still years away from being at a point where this technology is viable in regions of strong boundary currents along the peninsula or for undertaking repeat hydrographic surveys in the open waters of Drake Passage.

9. Alternative energy

NSF should explore means to reduce that re-supply demands for Palmer Station, in particular alternative energy for fueling the station. Reducing the number of vessel trips needed for re-supply also helps reduce the carbon footprint of the program.

Impacts on R/V Nathaniel B. Palmer and Palmer Station Operations

The final two hours of the committee meeting was devoted to discussion of the impacts of the absence of the LMG on NBP and Palmer Station operations. It is clear that there will be greater competition for the NBP and that this will likely result in greater shared use time on the NBP. This is virtually impossible for some projects, such as drilling operations given the cost of leasing equipment and need for large numbers of support personnel.

Given that the NBP re-bid will take place in 2012, what if the financial situation does not improve by then? ARVOC recommends a 5-year extension on the NBP charter to lock in on the best possible rates and to allow more time to plan for the next generation research vessel. With that said, there are a number of scientists who feel that greater ice breaking capability is needed to work in places like Pine Island Bay, which is considered the most unstable part of the West Antarctic Ice Sheet, and the western Weddell Sea, where physical oceanographic processes remain poorly understood, despite the crucial role of the region in global ocean circulation.

As a final note, the committee spent some time discussing the need for a better pier facility at Palmer Station to address the problem of limited access to the station by most vessels. Until this problem is solved, options for re-supply of the station will remain limited.

In summary, ARVOC is concerned that continued decline in research vessel support will severely impact the US Antarctic Research Program at a time when better understanding of the impacts of global change is crucial. The committee feels that there is a need for communicating to a broader community the potential impacts of reduced vessel support on science. An EOS article would be one effective means of accomplishing this.

End

No Table of Contents

Links:

- 1 Rationale for Decision- Scott Borg.
- 2 “other” vessel spec comparisons.
- 3 Termination of LM Gould Lease and WAP science (questionnaire)
- 4 Janet Sprintall slide information ([page 6](#))
- 5 March 2008 Action Items ([page 7-8](#))
- 6 Agenda and Attendance list ([page 9-10](#))

Today’s meeting is to discuss how to accomplish critical science in the absence of the ARSV Laurence M. Gould.

Following roundtable introductions, John Anderson noted that today’s meeting is not the typical ARVOC annual meeting. Rather, the time will be used for discussions concerning the status of Antarctic research, the ARSV Laurence M. Gould marine operations, and, most importantly, how best to maintain a strong science program in the event of the absence of the LMG.

Scott Borg restated briefly the contents of his letter to the community (see *Rationale for Decision*). Because of the effects of the government budget cuts, the NSF is operating on a continuing resolution which results in a flat budget through the austral summer. The recent government “bailouts” will also negatively impact funding to NSF.

Essentially, the NSF is continuing to operate at the same budget level as in FY07. Because of this, the NSF has made several cutbacks including the decline of a few science events, cutbacks to the planned LC130 missions (from 411 missions to 300), curtailing or combining some events/programs onto the vessels, and deferring some projects. Budgets within NSF were restructured, i.e., ice coring budget was shifted to his area; fuel cost data was studied and continues to be studied closely. It was noted that even if fuel costs go down by the time of the next fuel purchase, there won’t be resulting “excess” funds. Discretionary spending is very limited and it was with a lot of thoughtful effort that the NSF cancelled the ARSV plans. The government procurement rules (FAR) mandated that action be taken and spending cut. When the cost of the LMG became clear, the decision was made to have Raytheon Polar Services cancel ARSV.

The decision does not mean the NSF does not value the science research. Rather, we (NSF/ARVOC/RPSC and the broader science community) need to have open dialogue on how to proceed in the long run. We have to figure a way to do the science for the most disciplines in joint efforts. Today is for exploring your ideas and for developing credible arguments that can be used in promoting research.

The LMG goes off charter July 2010, with decommissioning most likely in Talcahuano. Equipment/gear removal may take six weeks. The task is to look at what functions are

needed for a strong Antarctic program. Then, after consensus, how to accomplish those functions must be decided. The NSF wants to hear from you, the science community, on how this process needs to evolve. Workshops may be one way to gather information. Once the information comes to NSF, then it's up to Program Managers to meld that into what will work best. Scott/Program Managers can take the information to the Science Advisory Committee for consideration.

International collaborations, UNOLS, bi-Polar science operations, chartering commercial vessels, tour ships are some possible options in place of the LMG. Perhaps a more holistic opinion of the vessel - a partnership with non-federal and federal ships, similar to the atmospheric research is another possibility. Sharing of OPP and OCC resources might be beneficial.

For ARVOC to proceed, more information is needed, per John Anderson. International vessels' and UNOLS vessels' daily costs and capabilities need to be compared. Cruise schedules, availability, and berthing are also issues that need to be factored in. Linda Goad will provide a list of UNOLS rates/costs. Alex/Skip will provide an analysis of our current OPP vessels. ARVOC/RPSC will further consolidate the comparisons, pros and cons, for further report to NSF. (see attachment 2 "other" vessel spec comparisons)

John noted that we (ARVOC) bring together the greatest history. We need to brainstorm and come up with options, suggestions for alternatives. To do that, we could look at every project over the next three years to help determine which projects might fit best onto/into the vessel(s) be it UNOLS, international collaboration, NBP. Fuel costs will still continue to be a driving force in any plan. Hugh Ducklow's questionnaire can be sent out to a larger science group and remarks tallied for review. (see attachment 3 *Termination of LM Gould Lease and WAP science*) All of the options (UNOLS, international collaboration, chartering commercial vessels, possibly air support) can be compared, new ideas considered, costs evaluated and, then, ARVOC recommendations that will allow science to continue at the same level as at present time can be provided to the NSF.

General discussion/brainstorming continued.

Janet Sprintall discussed her presentation for AGU and provided slides of her physical oceanography "ship of opportunity" measurements taken from the LMG. (see page 6 for slide information.)

The issue with the Palmer Station pier was discussed. Randy Olsen, RPSC engineer, is reviewing the pier specs to determine if modification rather than blasting is an option, per Bob Farrell. Costs for any pier renovation may be a deterrent/deciding factor. The pier continues to be an item of discussion between RPSC and NSF. ARVOC will be kept informed.

Alex Isern gave slide presentation for the LMG and NBP "250 average days at sea". It was noted that an annual charter is the biggest expense to operating these vessels. While

fuel costs may fluctuate, finding ways to make better use of sailing time is imperative if the vessels continue under charter. As Scott stated earlier, both vessels need to be thought of holistically- wider use, other organizations, etc. The current day rates are not sustainable when/if the vessel only sails 180 days.

Committee members noted that other disciplines need input/representation and that the NBP schedule will be impacted by whatever is decided for the LMG. Also, the NBP charter will be expiring in 2012 and this must be factored in.

The scientists' response to the questionnaire indicates a critical need for an icebreaker to continue their science in Antarctic waters. Scott Borg asked for more information/suggestions to use in support for funding with higher levels at NSF. Specifically, the report might include responses to: what if the icebreaker capability goes away? What are the ramifications? What is lost? What is the impact on science? A report from the scientists most affected by loss of the LMG will be useful in the NSF funding decisions, per Scott.

General roundtable discussion noted that loss of the LMG might negatively:

- Cause cessation of science, as it's conducted today, in the ice.
- Surrendering US leadership in the Antarctic to other countries, loss of competitive edge.
- The scientists will have to develop new capabilities on new platforms-build new autonomous equipment.
- Science support staff will be an unknown.
- Possibly, ice edge study may be lost, certain measurements may not be an option.
- Negative impact to Palmer Station activities.
- Even though loss of the LMG can "save" money, it's an unknown as to how any savings will be distributed/used. The funds may not be earmarked for another icebreaker or for buying international ship time.
- If vessel is resupply mode only, there may be a safety risk factor. Currently the vessel provides an evacuation system. Also, dive capability may be lost.
- The premier oceanographic, climate, biological science arena will be less available for study. Geo chemistry, genomics, biochemistry studies?
- Field camp scientists who use the LMG for shuttles may have difficulty finding other shuttle sources. Access to islands for birders, etc will be impacted.
- Competition for NBP sailing time will be greater and those days will be impacted. Long or longer transits might be required of the NBP.
- Currently, one advantage for the LMG and NBP is the scientists are able to go to sea without having to share days with foreign scientists who may have their own agenda. The LMG is not just a "resupply" vessel and will be very hard to replace.
- Change to how the LMG operates will change the makeup of the marine staff and its management.

- Giving up the “doing science” in difficult winter, heavy ices will jeopardize that science because lesser ice capable chartered vessels won’t be able to go into the hard ice.
- Repositioning the NBP or chartering an icebreaker appears to be the only options to replacing the LMG.
- Would bi-polar solutions negatively impact scientists who collect yearly data by not having vessel available every year? It is important to avoid severe impediment for those scientists that gather data every year.

General roundtable discussion noted that loss of the LMG might positively:

- Money may be freed up- but it’s unclear if money will be used for vessels or if it might go to other needs.
- There may be science opportunities that don’t require ice breaking capabilities.
- There are international collaboration opportunities with chances to meet and/or partner with international scientists.
- UNOLS vessels may be able to fill gaps.

Alex noted that this is a very complex topic- science, resupply, haz waste, scheduling- all without discretionary funds. Prioritizing may be the only way to identify what can’t be lost, what are the imperative, the essentials, what is the strong thrust for the next five to ten years?

Summary for December 10th : John Anderson summarized today’s meeting and asked for group input if there are other items.

- 1) There seems to be agreement we need ice strength capability. It also seems we’re going to lose that and this will be adverse to the program.
- 2) We brainstormed alternatives but no definitive actions from today.
- 3) We made a stab at verbalizing what impact this will have on the science community. Seems like we have more negatives than positives.
- 4) Have we really canvassed the fuller science community? If we haven’t, then perhaps we need to canvass a wider group. The AGU group could be contacted. Tom Wagner, Scott Borg, Jessie Crain will attend town hall AGU meeting. Tom Wagner indicated this topic will be on the program/overview/presentation. While this isn’t the entire science community, at least we can say we did make a presence there.
- 5) Also, workshops, -maybe, as Scott suggested, we could propose a workshop to bring together the geophysical, land based community, etc to help brainstorm on how “to keep science” on the high level it is now even as we face the loss of the LMG.
- 6) It’s important to get word out to science community of OPP cutbacks- through newsletters, EOS.

Thursday, December 11- reconvene 8:30AM

Bob Farrell reviewed RPSC action items from the March 10-11, 2008 meeting. (see page 7-8) for *March 2008 Action Items* for RPSC personnel staffing changes, charter

amendment suggestion, sample shipment recap report.) Other actions from the March meeting assigned to Rob Dunbar, previous Chair, were not specifically addressed today due to Rob being unavailable to attend this meeting. These items are tabled until the next ARVOC meeting or members may be advised of action status via email.

John Anderson called for solicitations for current vacancy on the ARVOC board. Nominees' names, discipline, recommendations can be submitted to John via email. Election will be by email, with results reported back to RPSC, NSF, and committee members.

The next ARVOC meeting will most likely be teleconference. Members/NSF will be contacted for their schedules and, as schedules permit, a teleconference will be arranged for spring 2009. As the next meeting will involve teleconferencing, the mode of the meeting will most likely be shorter (possibly 1- 1 ½ hours) and agenda items will be provided to all committee members prior to the call. This will allow most issues to be discussed/resolved via email before the teleconference date. If/when the financial situation changes, ARVOC may go back to face-to-face meetings.

March 10-11, 2008 minutes were approved.

The NBP contract end date of 2012 was discussed. There were no other significant issues addressed at this time concerning NBP operations. Discussions yesterday and today included NBP operations even though the LMG's status was the main topic.

ARVOC recommends a 5-year extension to the R/V Nathaniel B. Palmer's charter.

Meeting adjourned: 11:00am

Janet Sprintall presentation:

Strategies for Underway D.P. Monitoring Programs

CRITERIA FOR SUCCESS:-

- winter and summer high-resolution underway sampling
- near-repeat transects across Drake Passage
- continual on-board tech support to quickly identify problems
- uncontaminated and stable water supply for pCO₂, TC0₂ and TSG
- unobstructed location on masts for met. package
- sufficient deck space for equipment and lab space for data acquisition
- near-real time data communications to shore (gas, ADCP)

POSSIBLE SOLUTIONS:

- cruise ships: summer (DJF) deployments only; require on-board technical support (berthing spaces?); stability of long-term commitment? Installation of instrumentation and electronics? ADCP?
- UNOLS/NOAA vessels: some ADCP/XBT/TSG/met capabilities; clean-water intake possible for gas sampling; technical support?
- NBP: as for UNOLS vessels; possible winter-time sampling?
- International Charters: variable platforms

Use of multiple platforms requires careful intercalibration of obsvns and technical staff support to undertake transferring the operation: costs associated with this??

March 2008 Action Items

Recommendation	Status																																								
<p>#1 Rob Dunbar will speak with UNOLS office, Mike Prince, MOSS Landing, and others in an effort to get a small group together to begin dialogue (on the PRV). Rob will report back to ARVOC on his efforts. We need to articulate pros/cons of having a closer association.</p>	<p>unknown</p>																																								
<p>#2 ARVOC asks that RPSC (Bob Farrell, Dan Herlihy) continue to have "staffing" as an agenda item for ARVOC and, if there are major changes to staffing, to inform ARVOC when these happen. ARVOC also asks that RPSC give some consideration to steps that might be taken to ensure retention of experienced marine group staff.</p>	<p>Marine staffing changes since March 2008:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Position</th> <th>Departed</th> <th>Yr/Month</th> <th>Arrived</th> <th>Yr/Month</th> </tr> </thead> <tbody> <tr> <td>Mar.Super</td> <td>A.Doyle</td> <td>Jan '08</td> <td>B.Kluckhohn</td> <td>Jul '08</td> </tr> <tr> <td>Ves.Lab Super</td> <td>B.Kluckhohn</td> <td>Jul '08</td> <td>A.Coyac</td> <td>Jul '08</td> </tr> <tr> <td>Plan.Sup.Mgr</td> <td>S.S-Sliester</td> <td>Mar '08</td> <td>P.Jackson</td> <td>Jun '08</td> </tr> <tr> <td>Plan.Sup.Mgr</td> <td>K. Newyear</td> <td>Jul '08</td> <td>To part time</td> <td></td> </tr> <tr> <td>Plan.Sup.Mgr</td> <td>K. Newyear</td> <td>Nov '08</td> <td>Under recruitment</td> <td></td> </tr> <tr> <td>Proj Mgr</td> <td>P. Olsgaard</td> <td>Jun '08</td> <td>Position dropped</td> <td></td> </tr> <tr> <td>Asst.Lab Super</td> <td>A. Coyac</td> <td>Jul '08</td> <td>Position dropped</td> <td></td> </tr> </tbody> </table>	Position	Departed	Yr/Month	Arrived	Yr/Month	Mar.Super	A.Doyle	Jan '08	B.Kluckhohn	Jul '08	Ves.Lab Super	B.Kluckhohn	Jul '08	A.Coyac	Jul '08	Plan.Sup.Mgr	S.S-Sliester	Mar '08	P.Jackson	Jun '08	Plan.Sup.Mgr	K. Newyear	Jul '08	To part time		Plan.Sup.Mgr	K. Newyear	Nov '08	Under recruitment		Proj Mgr	P. Olsgaard	Jun '08	Position dropped		Asst.Lab Super	A. Coyac	Jul '08	Position dropped	
Position	Departed	Yr/Month	Arrived	Yr/Month																																					
Mar.Super	A.Doyle	Jan '08	B.Kluckhohn	Jul '08																																					
Ves.Lab Super	B.Kluckhohn	Jul '08	A.Coyac	Jul '08																																					
Plan.Sup.Mgr	S.S-Sliester	Mar '08	P.Jackson	Jun '08																																					
Plan.Sup.Mgr	K. Newyear	Jul '08	To part time																																						
Plan.Sup.Mgr	K. Newyear	Nov '08	Under recruitment																																						
Proj Mgr	P. Olsgaard	Jun '08	Position dropped																																						
Asst.Lab Super	A. Coyac	Jul '08	Position dropped																																						
<p>#3 Data Retention- NSF (Scott Borg) will review and amend the award letter to include how data retention is handled, justified. For information purposes, Rob Dunbar will provide Scott Borg with a copy of the policy letter he wrote to Tom Wagner. Ways to get this information out to grantees will be identified.</p>	<p>Still researching</p>																																								
<p>#4 Sampling Shipping-RPSC (Ken Nararro) will review the procedures for shipping, will discuss with Pt. Hueneme staff the problems encountered, will work toward developing better procedures, and will provide ARVOC with a sample shipment report at next regularly scheduled meeting.</p>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Data from Palmer Station and those Marine TCN's that were labeled with the new sample designator in CTS.</p> <p style="text-align: center;">Oct 2007-Dec 2008</p> <p>105 TCN's shipped from Palmer Station 44 TCS's shipped from LMG/NBP</p> <p>At Palmer Station, they collect sample shipment data for each group and will be sending a summary email to grantees to better aid them when entering data for the following year's SIP. Chart also reflects RPSC need to adjust our budgeting in terms of materials requested and planned for to support science sample shipments. This data was collected Oct '07 through Oct '08 and relates to the sample shipments and SIP requests from 7 groups based at Palmer Station.</p> </div> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <caption>2007-08 SIP-REQUESTED QTY VS ACTUAL QTY SHIPPED</caption> <thead> <tr> <th>Item</th> <th>SIP-REQUESTED QTY</th> <th>ACTUAL QTY SHIPPED</th> <th>% Increase from Projected</th> </tr> </thead> <tbody> <tr> <td>THERMOSAFES</td> <td>28</td> <td>61</td> <td>118%</td> </tr> <tr> <td>NON-HAZARDOUS DNF OR NON-TEMPERATURE SENSITIVE SAMPLES</td> <td>8</td> <td>16</td> <td>100%</td> </tr> <tr> <td>HAZARDOUS SAMPLES</td> <td>7</td> <td>23</td> <td>229%</td> </tr> <tr> <td>NON-USAP CARGO SHIPPED SAMPLES</td> <td>4</td> <td>16</td> <td>100%</td> </tr> </tbody> </table> </div> <div style="width: 45%;"> <table border="1" style="width: 100%; border-collapse: collapse;"> <caption>SAMPLE MATERIALS ESTIMATED VS ACTUAL</caption> <thead> <tr> <th>Item</th> <th>REQUESTED</th> <th>ACTUAL</th> <th>% Increase from Projected</th> </tr> </thead> <tbody> <tr> <td>DRY ICE (KG)</td> <td>1020</td> <td>1815</td> <td>78%</td> </tr> <tr> <td>GREEN MAT</td> <td>114</td> <td>214</td> <td>86%</td> </tr> <tr> <td>GREEN ICE PACKS</td> <td>24</td> <td>66</td> <td>175%</td> </tr> <tr> <td>BLUE ICE PACKS</td> <td>0</td> <td>32</td> <td>320%</td> </tr> </tbody> </table> </div> </div>	Item	SIP-REQUESTED QTY	ACTUAL QTY SHIPPED	% Increase from Projected	THERMOSAFES	28	61	118%	NON-HAZARDOUS DNF OR NON-TEMPERATURE SENSITIVE SAMPLES	8	16	100%	HAZARDOUS SAMPLES	7	23	229%	NON-USAP CARGO SHIPPED SAMPLES	4	16	100%	Item	REQUESTED	ACTUAL	% Increase from Projected	DRY ICE (KG)	1020	1815	78%	GREEN MAT	114	214	86%	GREEN ICE PACKS	24	66	175%	BLUE ICE PACKS	0	32	320%
Item	SIP-REQUESTED QTY	ACTUAL QTY SHIPPED	% Increase from Projected																																						
THERMOSAFES	28	61	118%																																						
NON-HAZARDOUS DNF OR NON-TEMPERATURE SENSITIVE SAMPLES	8	16	100%																																						
HAZARDOUS SAMPLES	7	23	229%																																						
NON-USAP CARGO SHIPPED SAMPLES	4	16	100%																																						
Item	REQUESTED	ACTUAL	% Increase from Projected																																						
DRY ICE (KG)	1020	1815	78%																																						
GREEN MAT	114	214	86%																																						
GREEN ICE PACKS	24	66	175%																																						
BLUE ICE PACKS	0	32	320%																																						
<p>#5 Charter change - ARVOC (Rob Dunbar) will review and make changes to the (ARVOC) charter to include "ODEN or any other vessels". The final/revised charter</p>	<p>Page 4 USAP User Committees Charter and Bylaws 28 Nov 2005 is amended to read: ARVOC members are representative of the community of ocean</p>																																								

<p>will be an agenda topic at the next ARVOC meeting.</p>	<p>research scientists with particular emphasis on those with current or previous NSF/OPP support <i>for research aboard vessels that operate in the Southern Ocean.</i> This change and several other minor changes are now incorporated into the UCC and Bylaws and will be posted to website: http://www.usap.gov/conferencesCommitteesAndWorkshops/userCommittees/documents/usapcommitteecharter.pdf</p>
<p>#6 Ship Safety –Chief Scientists and individual group leaders should inform/instruct their participants on matters of ship and lab safety on board. This is in addition to the safety training that ships’ crew provides. Dr. Erb will be asked to add a comment to the Chief Scientist letter concerning safety instructions for participants.</p>	<p>Chief Scientist letter (vessels and stations) are in-process of being amended by NSF and RPSC. Revised CS letters originating out of NSF began with NBP09-01 and LMG09-01.</p>
<p>#7 Capital Equipment- ARVOC asks that they be kept informed of capital equipment major purchases for the vessels, regardless of the funding source. Their experience and input could be used to help make informed decisions. RPSC will provide ARVOC with a capital equipment report at the next meeting.</p>	<p>There have been no Capital Equipment purchases since the ARVOC meeting in March.</p>
<p>#8 PRV- ... ARVOC (Rob Dunbar) will contact the Chair of the OPP Advisory Committee to ask if the PRV can be an agenda topic at their May meeting. Rob will check on the availability of additional copies of the “PRV Notebook” that can then be provided to ARVOC members. ... Efforts will be made to keep the PRV active and to gain more support from the science community and the funding agencies.</p>	<p>The PRV was added to the OPP Advisory Committee’s May meeting but it was never discussed. Several additional DVD copies of the PRV notebook were made available from RPSC and distributed to ARVOC member following the March meeting.</p>
<p>#9 Vessel Wi-Fi- ARVOC members recommend that Wi-Fi be installed aboard the vessels. NSF IT approval is required.</p>	<p>Limited vessel Wi-Fi has recently been installed aboard both vessels, is currently in the configuration and testing stages, and should be fully operational by the end of December.</p>
<p>#10 ADCP Diagnosis and Repair- RPSC will ensure the ADCP equipment is working....Spare parts will be available and spare parts inventory replaced when used/depleted. RPSC (Bob Farrell) will instruct POCs to alert the Principal Investigators when/if an important piece of their equipment malfunctions or fails.</p>	<p>Following extensive tests and subsystem swap-outs, it was determined that the system failure lies in the transducer. Replacement has been scheduled for July/August 2008 when the NBP goes to drydock.</p>
<p>#11 Cruise Outbriefs- RPSC will send the password and instructions for assessing the (cruise) outbriefs to all members. All committee members will be added to the weekly sit-report distribution list.</p>	<p>Done as of the end of March 2008 for all committee members from the March meeting. In progress for any current new committee members and will be completed by the time of return to home institutions following this meeting.</p>

ANTARCTIC RESEARCH VESSEL OVERSIGHT COMMITTEE (ARVOC)
Room 595, NSF, 4201 Wilson Blvd., Arlington, VA
Wednesday, Thursday-December 10 and 11, 2008

AGENDA

8:00AM Wednesday	Welcome/Introductions/New Member	John Anderson
8:30 AM	NSF Report	Alex Isern
8:45 AM	ARSV Re-bid	Bob Farrell, Skip Owen
10:00 AM	<i>Break</i>	
10:15 AM	Status/projected future of Antarctic Research	NSF
11:00 AM	Status/future of Marine Operations- including ODEN science cruises, use of other UNOLS Vessels, PRV status	NSF
12:00 PM	<i>Lunch- on your own</i>	
1:15 PM	Continuation of morning topics and brain storming on how to maintain a strong science program in the absence of LMG. Janet Sprintall-LMG physical oceanography ship of opportunity measurements	NSF/ARVOC/RPSC
3:00 PM	<i>Break</i>	
3:15 PM	Continued Discussion of Science Support	
	<u>Close meeting for the day 1 4:30 or 5:00</u>	
8:30 AM Thursday	Brief recap of Wednesday session	John Anderson
9:00 AM	RPSC Personnel changes/status	Bob Farrell
9:30 AM	Recommendations/status from 2006 meeting	Bob Farrell
9:45 AM	Status of Wi-Fi install on vessels, Capital Equipment purchases, Palmer Station OPS and Vessel OPS status	Bob Farrell
10:15 AM	Charter revision/approval to include addition of ODEN	Bob Farrell
10:30 AM	Other Business Next meeting date/location Approval of March 10, 2008 Minutes	
11:00 AM	Adjournment	

Attendance ARVOC Wed/Thur December 10, 11, 2008

ATTENDEE	AFFILIATION	TELEPHONE	EMAIL
Chris Fritsen	ARVOC/DRI	775-673-7487	chris.fritsen@dri.edu
Bruce Huber	ARVOC/LDEO	845-365-8329	bhuber@ldeo.columbia.edu
Bruce Sidell	ARVOC/Maine Univ.	207-581-2563	bsidell@maine.edu
John Anderson, Chair	ARVOC/Rice Univ.	713-348-4884	johna@rice.edu
Janet Sprintall	ARVOC/UCSD	858-822-0589	jsprintall@ucsd.edu
Meng Zhou	ARVOC/UMB	617-287-7419	meng.zhou@umb.edu
Matthew Charette	ARVOC/WHOI	508-289-3205	mcharette@whoi.edu
ARVOC members not in attendance	Rob Dunbar/Stanford Maria Vernet/Scripps		dunbar@standford.edu mvernet@ucsd.edu
RPSC			
Skip Owen	RPSC, Spec.Proj. ARSV	207-610-0959	skip.owen@usap.gov
Dawn Scarboro	RPSC, Marine Adm.Coor. Sr.	720-568-2229	dawn.scarboro@usap.gov
Bob Farrell	RPSC, Director, Marine OPs	720-568-2015	bob.farrell@usap.gov
Other invited guests			
Kevin Speer	FSU	850-645-4846	kspeer@ocean.fsu.edu
Hugh Ducklow	Invited guest/MBL	508-289-7193	hducklow@mbl.edu
James McClintock	Invited guest/UAB	205-975-9525	mcclinto@uab.edu
Eric Saltzman	Invited guest/UCI	949-824-3936	esaltzma@uci.edu
Christian Reiss	NOAA	858-546-7127	Christian.reiss@noaa.gov
NSF			
Alex Isern	Oceans Program Mgr. OPP	703-292-8032	aisern@nsf.gov
Roberta Marinelli	Organisms & Ecosystems, Prog. Dir	703-292-7448	rmarinel@nsf.gov
Tom Wagner	Earth Sciences Prog. Director	703-292-4746	twagner@nsf.gov
Brian Stone	Dep.Div.Dir/Div.Dir.(Acting) OPP	703-292-8030	bstone@nsf.gov
Scott Borg	Div. Director, OPP	703-292-8033	sborg@nsf.gov
Jim Holik	Prog.Dir., OCE, Ocean Sciences	703-292-7711	jholik@nsf.gov
Linda Goad	Prog.Dir., OCE	703-292-7706	lgoad@nsf.gov
Bob Houtman	OCE	703-292-7704	bhoutman@nsf.gov
Kelly Falkner	Integrated System Prog. Dir, OPP	703-292-8033	kfalkner@nsf.gov
Jessie Crain	Research Support Mgr., OPP	703-292-7457	jlcrain@nsf.gov