PI: Hugh Ducklow **Event#: LTER**	**Ph:** **E-mail:** duck@vims.edu	**Cruise #:** LMG0401	**MPC:** Andy Nunn **Date:** 2/2/04

Yes	**No**	**Planning**	
X		SIP process adequate?	The PIs felt that the SIP process worked very well this year, and that the POC (Karl Newyear) was extremely helpful. However, they did have a few suggestions for improvement. 1. First of all, entering single items one at a time into the Polar Ice system is very time consuming, especially with long lists that are essentially a repeat of last year's lists on repeat cruises. The PIs have even used behind the scenes tricks to bypass Polar Ice entirely, and send Excel spreadsheets directly to the RPSC staff. The RPSC staff apparently prefers this since they have to extract data from Polar Ice to Excel in order to manipulate it on their end anyway. 2. The initial issue of the RSP was complete and early this year, but later changes and updates on order status never made it back to the PIs. They want some feedback on things like what has been ordered, when it's due, and when (and where) it arrives. Some things this cruise that were missed because of the lack of feedback were: o 16 sample jars (never arrived) o 1" bungee cord (we tried to buy in PA, but was not available there) microscope camera (never arrived) o O2 titration flasks (ended up at Palmer, so we got them but it caused a panic until we figured out where they were) o Xactic tank incubators (huge contraption the PI never needed but we carried around all cruise anyway)
X		RSP helpful and timely?	
X		POC responsive?	

Yes	**No**	**Medical**	
X		Kits sent out on time?	All the PIs seemed to think the system worked very smoothly this year, but once again they did have some comments. For this cruise in particular, with some people coming from Palmer station and some going directly to this ship, there seemed to be some confusion on where paperwork ended up. Palmer Station had files for people arriving on the boats, and vice versa. Also, on the matter of PQ status, the PIs were divided upon how timely the results were available to check online. PIs who didn't see their field team members frequently before the cruise found the system useful, but PIs who had their team members at their location would always find out about PQ status via word of mouth long before the status changes were reflected on the system.
X		Questions answered?	

Event#: LTER **Date:** 2/2/04			
Yes	**No**	**Travel**	Travel arrangements were excellent this year. The PIs mentioned Kelly Nevins as being particularly helpful. People that arrived early had lots of assistance and information. No one had any problems or difficulties with travel.
X		TRW available and understandable?	
X		Ticketing completed easily?	
X		Meet and assist service met requirements?	
		Equipment Availability	The researchers did have some equipment issues this year. A centrifuge was overlooked on the requested equipment list and one had to be borrowed from Palmer Station. And, as mentioned earlier, the new microscope camera never showed up, but RPSC managed to get an old microscope camera working, although this did necessitate installing a computer and monitor on the very cramped (and wet) back bench in the Wet Lab. Also, the old system could not be moved from microscope to microscope, but had to live at one dedicated station. The birders (B-013) singled out John Evans for special praise in setting up a very complete set of field gear for them. Several PIs had complaints about the warehouse inventory, which seemed to be wrong. It may have been an outdated inventory. This resulted in some confusion on what was actually available, or needed. On ECW gear, grantees reported that things are getting much better. They were very happy to finally have women's long johns, and they love the two-piece gloves with replaceable inserts. However, they all said that the field pants (wind pants shells) quote "suck." Apparently they are just cheap nylon and don't shed water at all. People on the field teams got soaked every time it rained or they sat on damp rocks. Everyone was very complementary of Alejandro at AGUNSA, who was helpful and friendly and went far out of his way to make sure everyone had what he or she needed.
X		**Requested** equipment available?	
	X	Damaged?	
X		Late?	
X		**ECW gear in good condition?**	

Event#: LTER **Date:** 2/2/04			
Yes	**No**	**Lab Space**	Most PIs felt they had adequate space to work. They finally had all the crushed ice they could want with the new ice machine.
X	X	Adequate? (electrical needs, bench space, water, etc.)	One complaint all the PIs agreed on is that the one place where there is a real space crunch is along the aft wall in the Wet Lab. With the PCO2 system in place; the FRRF sampling on the bench top; the birders assigned to that area (which they couldn't really use, they did all their computer work in the Lounge); various dissecting microscopes (and the computer system for the microscope camera); all the supplies and spares for TCO2 sampling; other groups coming back to take water samples all the time; and the setup for the net depth sensor chart recorder that area was jam packed all the time. Apparently there have been rumors of another permanently installed system going in on the aft wall (like the PCO2 system) and they all feel that there just isn't enough room there. The only suggestion to fix this is that RPSC set up another permanently running sink off the underway seawater system so samples and bench top equipment (like the FRRF) can be run somewhere else (maybe in the Baltic room or the hydro lab?) The seawater spigots at the forward sink in the wet lab and hydro lab don't have enough flow rate to assure the PIs that they are getting accurate time-synched readings that the rest of the system has. Also, drawers under the countertop are too wet and rusty to be used.
X		Remote Sensing support needs met? (QFax, Terascan, etc.)	Remote Sensing (ice images) were excellent and frequent.
Yes	**No**	**Quality of Hotel Services**	
X		Cabins clean and neat?	The PIs felt the cabins were all neat and clean. They appreciated that all the sheets fit the mattresses (and fitted sheets stayed in place) and they really liked the new comforters.
X		Linens clean and in good condition?	
X		Food quality and variety was good?	Researchers said that the food was great this year. Quote: "1000% better than last year." We had several vegetarians on board this trip, and they all seemed happy with the food too. Various special meal nights, like sushi, Mexican, and Chilean empanadas were really appreciated too.

Event#: LTER **Date:** 2/2/04			
Yes	**No**	**Personnel Issues**	The PIs all had good things to say about interaction with ECO this trip. They said everyone on the bridge was very conscientious on the Event Log and other record keeping. Also, they had constant changes to plans and schedules that the bridge crew kept up with and handled with skill and good humor. Ship control when doing delicate PRR deployments was especially good, with the mates changing pitch and thrust in tiny increments to produce just the right amount of forward motion with very little sideways drift despite strong winds and currents. The bridge very reliably handled special requests for notifications when nets were near surface or for other reasons. On the Engineering side, previous problems with flows and pressures on the underway seawater system in the wet lab and the aquarium room were avoided by notifying the engine room and having them check and monitor each change. ECO sent an Engineer up to supervise each modification, which they did quickly and professionally. There were no interruptions in the seawater system at all. The PIs singled out 2nd Mate James Bellanger for special thanks for all the interest and concern he showed for their requirements. The PIs also had good comments about the RPSC staff. They were very pleased with the smooth and professional Zodiac work at Avian Island, and the ease with which the mooring was recovered and re-deployed. MT's Jamee Johnson and Greg Buikema did a great job in both of these operations. They also felt the lab support they received from MST Eric Hutt was very helpful. Eric worked long hours at the final Palmer port call since final samples and swipes in the Rad Vans couldn't begin until after we arrived. SEE LAST PAGE FOR ADDITIONAL COMMENTS
	X	ECO?	
	X	RSPC?	
Yes	**No**	**Research Objectives**	The PIs felt they did accomplish all their objectives, but they also felt the cruise had been shortened some from previous years, and the unexpected stop at Arctowski on the northbound leg did mean cutting the schedule short by 16 hours or so. The PIs decided to skip the 1st process station, and a 2nd high-density grid to remove some time pressure, but these were not stations of primary concern. The tight schedule left them without any weather days in the schedule, but fortunately only 14 hours were lost during the cruise from bad weather. The PIs were aware that the office was willing to extend the cruise by a day or so if needed, but they decided to keep to the original schedule and only delay our return to PA if weather cut further into our time, which it did not. See a discussion on some problems with the FRRF instrument under the Future Cruises section. The net depth sensor also gave a lot of problems. The PIs indicated that initial set up of this instrument has always been tricky, since ship's wiring seems to change between cruises. Also, the sensor cage setup exposes the signal wire to possible damage every time the sensor is pulled over the wide mouth trawl block before and after each cast. The primary issue this cruise was constant water intrusion into the connector at the detector. This was discovered to be caused by the bulkhead side having a slight (2.3mm) difference in depth creating an air pocket that seawater forced it's way into during each cast. Until this was determined to be the problem, RPSC techs were constantly cleaning pins and re-splicing the electrical termination, which was mistakenly believed to be the source of the leak. SEE LAST PAGE FOR ADDITIONAL COMMENTS.
X	X	All accomplished? If not, please explain (weather, ice, equipment, personnel).	

Event#: LTER **Date:** 2/2/04			
Yes	**No**	**Surveys Completed?**	
	X	USAP Metrics Survey	PIs departed the Gould at Palmer Station with electronic copies of both surveys. They will complete them within 3 days and email them directly to Alice Doyle.
	X	GPRA Facilities Survey	
X		**Future Cruises** If returning for another cruise, are there any additional equipment or support needs your group anticipates?	The two instruments that gave trouble this trip were the FRRF and the net depth sensor. The FRRF, which was initially thought to be researcher science gear, but is actually USAP property, has been operated exclusively by B-016 (PI Maria Vernet, with Wendy Kozlowski as field team leader) and has been giving them a lot of trouble for years. MPC got the impression that researchers would like more support from RPSC on this. Our ET's did manage to fix their primary problem, after a long delay and many calls to the manufacturer, but they did experience several days of down time. Paul Olsgaard in the office was very helpful in arranging contacts with Chelsea and convincing them of the gravity of the situation. RPSC needs to acquire better documentation and possibly get some training on this instrument so support is better in the future. RPSC also need to be more proactive on dealing with known instrument problems, even if the instrument is allotted to a particular science group for years at a time.
		Anything you would like to see changed?	Other USAP-owned instruments which RPSC has very little in the way of documentation, training, or experience operating are the PRR and the towed Acoustic Biofish, although no problems were experienced with them this cruise. See Other Issues section for comments on unscheduled Zodiac deployments. The B-028 group (PI Robin Ross) mentioned as one idea for future cruises that they might want to use the Palmer Instrument Deck Zodiac (Rubber Duke) on a future LTER to do shallow CTD casts and acoustic surveys. The Rubber Duke was deployed from Palmer Station to fill in sites at the edge of the high-density grid.

Event#: LTER **Date:** 2/2/04			
Yes X	**No**	**Other Issues** Diving, Zodiac, E-mail support, interactions with stations, etc.	One surprise activity this cruise was sending the birders ashore at Armstrong Reef during the process station south of Reneaud Island. The MPC did find a half sentence referring to a possible stop in the RSP, but otherwise participants heard nothing about this except for a rumor from John Evans in Punta Arenas. Fortunately, the field team, Heidi Geisz and Brett Pickering, were both experienced Zodiac operators and could go ashore themselves since RPSC did not have MTs available to both run the process station and a Zodiac all day. It was also fortunate that weather was acceptable enough to run the main crane, since a Zodiac was not staged on the main deck that could be deployed by the knuckle crane. Comments from the B-013 PI William Fraser indicate that he didn't think he needed to specify island stops specifically any more than a team using the CTD would need to specify extra CTD casts, as long as other research objectives weren't impacted. The MPC suggested that while this may be true, main crane usage is not always possible, nor Zodiac operators always available, so some sort of rough outline of possible desired shore stops should be available so RPSC can prepare for them. One proposed possible solution would be to develop a rack or other system that allows carrying a Zodiac(s) safely out of the deck wash and still deploy it via the knuckle crane or by some other method than the main crane. Advance notice of Zodiac ops would still be needed so RPSC could provide additional Zodiac operators.

Event#: LTER

Date: 2/2/04

Additional Comments/Overflow:

Continued from Research Objectives-Net Depth Sensor comments:

Problems were had with the chart recorder borrowed from Palmer Station to record the data, which had several non-working pins and would spike whenever radio traffic occurred nearby. It was also so old that it was always suspect when troubleshooting the rest of the system. Beyond the water infiltration problems, this sensor is uncalibrated, so test casts to 250 meters with weights to try and get a reliable scale setting were needed. Even this wasn't perfect since any ocean current or ship motion would give the wire an angle, complicating and introducing error in the wire out versus depth relationship. Each time we re-terminated or re-spliced the line we would also see a change in depth reading (due to resistance changes in the line?), so depth would be off until we could do another calibration cast. The consequence here for the researchers is that they had very little confidence in knowing which exact layer they were sampling with the nets. This led to some frustration from the project PI that she wouldn't be able to put accurate net depth numbers in her reports. A calibrated (digital?) depth sensor and a redesigned sensor cage/housing could help in this respect next year.

Continued from Personnel Issues –RPSC comments:

PIs were also grateful that we allowed them to participate in more of the mooring work, with Hugh Ducklow watching and photographing all operations, and his team helping prep the traps and clean floats and releases. They felt they had a much better understanding of the operation this year. Hugh was especially grateful for assistance from ET Kevin Pedigo for his work with the Benthos deck unit and getting the acoustic releases to work despite the fact that they were buried in mud, for Joel Lenorovitz's help in downloading data and resetting the MicroCat recorder, and also in getting the releases ready to redeploy.