Chief Scientist: Hugh Ducklow **Event #:** LTER — B-013, B-016, B-021, B-032, B-045, B-114			**Ph:** **E-mail:** duck@vims.edu	**Cruise #:** LMG05-01	**MPC:** Andrew Nunn **Date:** 05-Feb-05
Yes	**No**	**Planning**			
	X	SIP process adequate?	All PI's expressed some level of frustration with the SIP software and Polar Ice in particular. Specific complaints were the inability to copy entries from previous years and incorrect or inaccurate unit quantities. For instance, being forced to enter units in milliliters when liter sizes were what vendors actually used. This may be the source of some excessive or inadequate purchases. Also, some items listed were either not located where indicated (i.e. they were at Palmer) or were the wrong type. The cell sizes and associated holders for the Spectrophotometer were mentioned specifically. They wanted itemized locations for equipment (Ship, Palmer or PA), and also more details on the specific model number. Lack of details on various items in Polar Ice was also faulted. Langdon's group also felt that having approval for divers also held up the SIP process because of the TBA divers. Several PI's noted that vendor or item substitutions occurred despite specifications to the contrary. All in all, they felt Polar Ice was a good effort, but needed badly to be updated and improved.		
X		RSP helpful and timely?	All PI's found the RSP to be timely and helpful. They appreciated it being out so early. Some noted that they wanted to be included earlier (or at all) in the cruise scheduling process.		
X		POC responsive?	All PI's had excellent things to say about Stephanie Suhr-Sliester the POC. They appreciated all her help walking them through the SIP process. Her assistance was invaluable.		
		Medical			
		Kits sent out on time?	PI's that used Raytheon Doctors had no problems, but PI's did have some problems with the blood kits that were sent out. Hollibaugh's group received kits with expired tubes and forms, and other PI's also received some expired items. Also, sending back kits was cumbersome and expensive in areas where Airborne Express was not available. Some PI's also noted that some of their doctors were uncomfortable sending in blood work to an unfamiliar lab, especially when they didn't automatically see the results themselves first.		
X		Questions answered?	All PI's noted that questions about the reviews were answered quickly.		

Event#: LTER **Date:** 05 Feb 05			
Yes	**No**	**Travel**	Many members of the science part received tickets quite late, and even itineraries didn't show up until less than two weeks before the cruise. The severe restrictions on ticket changes for Peninsula workers was questioned and described as very aggravating. Some mistakes in tickets, either with mismatches between flights or bookings also led to long delays while airline counter personnel reworked the tickets. The late tickets also led to limited seat availability in conjunction with travel over the holidays. Several PI's expressed an interest in receiving pre-booking info in the event that some people are held up in the process for medical. One volunteer who missed her flight due to weather called the 24-hour Hotline and was told not to worry, and that her PI would find somebody else! This is completely inexcusable.
		TRW available and understandable?	
		Ticketing completed easily?	
X		Meet and assist service met requirements?	All PI's had excellent things to say about AGUNSA's assistance, both in Santiago and in Punta Arenas. They also appreciated Kelly Nevins' work at the Raytheon office and thought she was extremely helpful and easy to work with.
		Equipment Availability	Most PI's had some sort of Equipment issue as follows: Frasier (013) – spare Iridium field unit not available, spare GPS not available but supplied from LMG ET's. They noted that John Evans was very helpful. Hollibaugh(114) – 10cm holder for the spectrophotometer not on board, only 4cm versions. Reported that the existing nutrient analyzer is as end of its lifecycle and new ones are desperately needed. They also noted that the SIP implied a spare spectrophotometer was available on board, when it was actually at Palmer Station. Vernet(016) – Also noted that the nutrient analyzer is ready for replacement. They noted that some of the new refrigerators need latches on the doors, and one ultralow is missing a shelf, but they did like all the new fridge's, freezers, and countertops in the Hydrolab. Noted a leaking pump on a antivibration platform. She also mentioned that the ice machine takes up some space in her lab. Ross/Quetin(028) – Primary concern was the Knuckle Crane and it's use with the towed Biofish. See notes in additional comment section. Reported that the new microscope camera actually worked, although lighting was a little tough. They also had to delay shipping samples because requested vermiculite was not loaded in PA, and only 1 bag was available on ship. They noted antivibration platforms were unusable for height reasons and so were removed. Also wanted lab layout for LTER to remain constant from year to year, and thanked Jeff Morin for tracking down the missing tray for their tables. Ducklow(045) – Was unhappy that the LSC for his rad van had to be picked up at Palmer, and that it appeared to be sensitive to ship motion. All PI's requested more and better tall chairs for the labs, and noted some of the existing chairs are in poor shape. They noted there are not enough safety belts for the back deck, and that we need a drying area for wet gear other than the labs themselves. All PI's thought ECW gear was good, but said they needed far more small and women's sizes available. They liked the blue rubber gloves with removable liners. Noted that mustang suits are getting old and also lack enough small sizes.
	X	**Requested** equipment available?	
	X	Damaged?	
	X	Late?	
X		**ECW gear in good condition?**	

Event#: LTER **Date:** 05 Feb 05			
Yes	**No**	**Lab Space**	All scientists were pleased overall with their lab areas. No one had any problems with electrical power or water supplies. There were some problems mentioned:
X		Adequate? (electrical needs, bench space, water, etc.)	Frasier's group (013) noted their lab area is too small, and that the PCO2 system occupies cabinet space that was formerly available to them. Several scientists commented on the lack of working sideboard area around all sinks, and especially around the seawater system sink. Vernet(016) noted high temperatures in some areas from the condensers on all the freezers and refrigerators in her lab, and suggested some better ventilation might help. Ross/Quetin(028) noted that since their lab is the standard path to the back deck that it is frequently very cold since the door is often open. However, too high a temperature in their lab would be detrimental to their lab work. No easy solution to this quandary was suggested. They also noted that the steel table seemed to give an electric shock or buzz to people occasionally. It is unknown whether this is from ship wiring or equipment on the table.
X		Remote Sensing support needs met? (QFax, Terascan, etc.)	All scientists were very impressed and grateful for the Terascan image assistance we received from Johan Booth at Palmer Station. His addition of text and LTER gridpoints was extremely helpful. His images were especially critical in such a heavy ice year, and directly contributed to the overall success of the cruise. Several scientists commented on the unfortunate loss of SEAWIFS. imagery.
		Quality of Hotel Services	Hotel service was a bit of an issue this year. Some rooms were apparently not cleaned, and one of the bathrooms was found to be dirty. Several scientists commented that the shower mats and the floors under them needed to be cleaned more often, although some commented that they were better than last year. The primary cause for concern in this area was the linens provided. All scientists expressed dissatisfaction with the new ECO policy of locking the linen cabinets. Several scientists had to wait while missing bedding was delivered very late at night at the start of the cruise, and many people did not receive towels initially. The locked cabinets meant that linins could not be changed out mid cruise without taking time to wash them immediately. They conceded that the sheets were of higher quality, but said the comforters were cheap and in very poor shape. Small towel size, low towel quality, and difficulty in getting towels at all were mentioned by all PI's. Linens are in such short supply that new passengers had to wait for old linens to be washed at every PAX embark. The food service, on the other hand, came in for high praise from all scientists. All three cooks (Romeo Agonias, Chris Bren, and Marcus Paparozzi) were given high marks for the excellence and variety of their meals. The Chief Scientists said the food is the best it's ever been on the LMG (in his limited experience of 4 years). Marcus was especially praised, not only for his cooking but also for his cheerful nature and friendly interaction with the cruise participants. The scientists did note that there was a lack of good foods for seasick passengers. They all wanted crackers, ginger snaps, ginger ale, and other snack foods set available. Some scientists also expressed an interest in some more low fat choices.
	X	Cabins clean and neat?	
X		Linens clean and in good condition?	
X		Food quality and variety was good?	

Event#: LTER **Date:** 05 Feb 05			
		Personnel Review ECO RSPC	ECO was also a point of some concern. The Chief Scientist noted that Captain Scott was very professional, helpful and engaged, and noted that planning and course setting was excellent. Comments about the Mates were more mixed, although opinions differed greatly among the scientists, with some praising a particular mate for helpfulness and flexibility when another scientist found that mate to be rigid and grudging with their cooperation. Overall, relations were friendly, but all scientists noted that the 100% turnover since last year and the relative inexperience of the crew in science operations made this cruise difficult. Every Mate had to be instructed on each deployment operation, and each one interpreted instructions quite differently. Tow speeds were not uniform, CTD operations were inconsistent, and communication between the Mates seemed to be lacking. Robin Ross noted that the bridge was still inquiring as to the proper tow speed on cast number 89 of the cruise. The Mates also seemed to be excessively cautious in very light ice, with 2-knot speeds being the norm. Several scientists noted that although the Mates seemed inflexible on operations, it could have been that they had instructions that severely limited their freedom to make changes requested by scientists. On the other hand, The deck hands and winch operators were highly regarded by all scientists for their hard word and helpfulness. Elfren Prado in particular was excellent, and was one of the very few ECO crew with science operation experience. The RPSC staff was given high praise this year. Jeff Morin the MST was noted for his skill with instrumentation, and MT's Jamee Johnson and Pete Dal Ferro were also praised for their professional and tireless deck operations. ET's Fred Stuart and Mike Carpenter were also praised for their work, especially quick work writing scripts, wiring and testing the net depth sensor, and smooth operations on CTD casts. The mooring recovery was described as great and flawless. The Chief Scientists asked that the entire RPSC staff be returned next year, and noted that the experience of the RPSC staff was essential in overcoming the difficulties caused by an inexperienced ECO crew. And the MPC was outstanding!
		Safe Practices Please give us your feedback about safety onboard this USAP vessel. Please give as much detail as possible.	Robin Ross and Langdon Quetin again noted that the Knuckle Crane deployment procedures instituted by ECO resulted in a decrease in back deck safety. See additional comments section for more details. All scientists noted that MST Jeff Morin was very conscientious about lab safety. The Chief Scientist noted that the lab safety crackdown (prompted by comments on "Picture of the Day" images) was unwarranted. It was noted that the RAD TRACK system still needs improvement. It was described as a good first pass, but that its not very user friendly and needs to be upgraded. Our annual comments on RADTRAK and suggestions on improvement seem to fall on deaf ears. Several scientists noted that the new ECO zero tolerance alcohol policy is too draconian.

Event#: LTER **Date:** 05 Feb 05			
Yes **X**	**No**	**Research Objectives** All accomplished? If not, please explain (weather, ice, equipment, personnel).	All Scientists were pleased that they accomplished virtually all of their science objectives. The only exceptions were due to ice concentrations. -The Fraser group was unable to deploy birders on Renaud Island, although we tried on two occasions. -Hollibaugh's group was very pleased, and what analysis they could not complete on board because of the lack of a 10cm spec holder can be completed back at their institution. They are also convinced that there is some ammonia contamination in the Milli-Q system, and so delayed some analyses for that reason as well. -Ducklow noted that 100% of objectives were met except for inside stations due to ice. Also noted that we might have attempted a 2nd inside station if we hadn't been delayed by port repair operations and the extremely slow main crane cargo ops. -Vernet said she accomplished all of her objectives. -Ross/Quetin said that another ice station would have been nice, and that the one ice station we did accomplish had some of the most interesting and valuable data of the cruise. Several scientists noted that the delays, while regrettable, were not a crisis because of the excellent weather overall during the cruise. They noted that the 28-day science schedule is only workable in good weather. Clarification: we lost 1-2 days right at the start due to port operations and main crane problems, but were saved by extraordinary weather. In a "normal" year we expect to lose 2-3 days to weather, which would have been catastrophic this year.
X **X**		**Future Cruises** If returning for another cruise, are there any additional equipment or support needs your group anticipates? Anything you would like to see changed?	-Ross/Quetin – requested that some racks be built to support their nets and keep them off the deck rather than leaning them against other deck gear. Preliminary drawings for this are available on request. They also requested that we develop some way to produce a real time hard copy or digital copy of the net depth sensor data. They also noted that the growth racks in the aquarium room are showing their age. -Vernet- requested some sort of space be made available for drying ECW gear and mustang suits. Perhaps a drying rack in the hold? They noted that insufficient small sizes on ECW gear and mustang suits should have been foreseen from clothing forms filled out by every grantee. Several scientists suggested we needed better communications with the bridge. They also suggested that on their part they wish they had made more time to be on the bridge during operations, but also suggested it would be good if bridge officers spent some time on the back deck observing operations and learning more about them. All scientists suggested that he CCTV screens are inadequate for viewing detailed displays such as the TSG, the CTD, the Sonar, and other screens. They requested that some Hi-Res network broadcast computer displays be available for these purposes. They also wanted more CCTV channels, and better views of back deck operations. They also suggested some of the birdnesting on the DUSH 4 could have been avoided if the winch operator had a dedicated CCTV view of the winch such as they have on the NBP. They expressed an interest in having more customized data displays similar to the ones on the NBP as well. They noted that RPSC needs to provide a dummies guide for operation of the entertainment system remote controls in the lounge.

Event#: LTER **Date:** 05 Feb 05			
Yes **X**	**No**	**Other Issues** Diving, Zodiac, E-mail support, interactions with stations, etc.	The Chief Scientist noted that while objectives were met, several incremental delays could have caused us problems if it hadn't been for the excellent weather. The delays he noted were the 12 hour delayed departure from PA for welding and hydraulic work, several hours lost because medium high winds prevented us from tying up at Palmer immediately, the extremely slow main crane, the spill response, and the post spill response meetings. PI's noted that the evolution of ECO's reaction to the spill, from denial of a problem to full-blown spill response seemed bizarre. He noted that even apart from the spill, the slow main crane cost at least one half day of science. The responsibility for the event log came into question, with Captain Scott maintaining the sit-rep, event log, event notification, and the regular log all distract the Mates from their full time job of operating the ship safely. The scientists noted the event log needs to be maintained by the bridge because it is the one space that is manned 24 hrs a day providing a universal authority for deck-ops. They also noted that other science vessels maintain a far more detailed event log as a matter of course, regardless of what the scientists request. The Chief Scientist noted that the notification, planning, and data entry system for shipping samples on the ship seems clumsy compared to Palmer Station. He would have appreciated more advance notice on ice and freeze safe requirements, and some better forms for selecting ice types, quantities, and freeze safe sizes. He was also unprepared for the MOCA cargo system since he's used the Palmer Station system in the past. He suggested a general meeting on cargo and sample operations for people unfamiliar with it prior to the 2nd Palmer port call might be in order. Robin Ross was especially grateful that ET Fred Stuart was able to help her so much with the idiosyncrasies of the Apple Macintosh and it's interface with the ship's network Several scientists have said they would like to have some sort of response to this outbrief. Especially if any of the points raised are in the process of being addressed.

Event#: LTER

Date: 05 Feb 05

Additional Comments/Overflow:

Knuckle Crane from Equipment Availability: The Knuckle Crane was a source of some concern on this trip. The Chief Scientist was somewhat unhappy that the cruise start was delayed by 12 hours and the cause of this was the repair work on the Baltic Room Boom and the modifications to the Knuckle Crane in conjunction with conflicts with the Christmas Holiday. The Primary Issue, however, was the new ECO protocol for use of the crane with the towed Biofish. The crane was modified with a rotating fairlead head, and the bulwark was modified to allow a forestay cable to be attached to the crane during use. With these modifications the crane is rated by its manufacturer to tow with up to 500 lbs of lateral load without a cable, or with 1000 lbs of lateral load with the use of the forestay cable. The manufacturer's opinion is that our load with a Biofish is less than 250-300lbs. When we calculated the lateral load on site with a dynamometer and took the wire angle into account, we found the typical lateral load to be 17 lbs, and the maximum observed load in any seas was 38 lbs. (exact calculations and diagrams available on request) Despite this, ECO was absolutely inflexible on requiring that the forestay remain in place and that it be taut every second that the Biofish was in contact with the water, even during deployment and recovery. ECO preferred that we tighten the forestay cable with hydraulics, but after the steel pad eye was torn off the crane and flew across the deck past scientists at one point, we used a block and tackle to tighten the cable for the rest of the cruise. Beyond the decrease in safety and increase in difficulty that the use of the forestay cable entails, there is also the issue of risk to the Biofish. Since we often operate in water with significant ice concentrations, the Biofish must be able to be lifted quickly out of the water to safety. Since the forestay cable made rapid removal impossible, the Biofish was towed behind the boat with decreased signal clarity due to the wake in even light ice concentrations. The scientists thought risking an $80,000 towed instrument to prevent even the faintest risk of damage to a knuckle crane worth less than half that price was irrational. Despite all this, the scientists were adamant that towing with the knuckle crane, even with the forestay cable, was far preferable to towing from the starboard A-frame.

Zodiac Operations: Perhaps more than other cruises, the LTER cruise is a heavy mix of both deck and zodiac operations. The constant transfer of zodiac's from van tops, to shore, to deck, and to the sea for use at the process stations and field camps took a great deal of time. One very significant factor was that ECO was extremely reluctant to use the main crane at all while the ship was at sea. Even in sheltered waters such as Arthur Harbor, and with negligible winds, ECO insisted they must first pump out the anti-roll tank, which is a 1 to 2 hour process before we could use the main crane. This despite the fact that the zodiac is a negligible load, and the crane in many cases was only needed to move the zodiac 20' from a container top to the back deck within reach of the knuckle crane. We were extremely fortunate this year that the weather was so mild, and the seas were so calm, because as a result of these policies we often found ourselves hundreds of miles offshore for days at a time with up to 3 zodiacs on deck. If we had experienced rough seas, all three zodiacs could have been damaged by waves on deck, or even lost entirely. The zodiac's on deck also interfered with all other deck operations, and necessitated several trips past Palmer Station to have them driven to shore so they would not interfere with the mooring operation. We desperately need a system for stowing and deploying the zodiac's where they do not delay or interfere with deck operations, and one which allows them to be deployed without the use of the main crane. Drawings of several designs that would meet this purpose are available on request. One secondary advantage to installing such a system include finally having a fast deploy rescue boat system for man overboard situations.