

**Report to the UNOLS Arctic Icebreaker Coordinating Committee
From the Antarctic Research Vessel Oversight Committee**

James H. Swift
29 March 2005

It has been nearly one year since the time of the last ARVOC meeting, and so there is little new official ARVOC business since the time of the previous report to the AICC in November 2004.

The principal news regarding RVIB Nathaniel B. Palmer is that after yard work the Palmer has regained the Damage Stability criteria necessary to operate with all normal fuel loads. Final ABS approval of the revised draft lines is expected within a week or so. Thus very soon the Palmer will no longer be restricted to cruises with a maximum of ca. 25-30 days. Steve Ackley reports that the Shaldril cruise (www.shaldril.rice.edu) is currently installing its drill rig and is listed as scheduled for 31 March - 24 April 2005.

The US Antarctic heavy icebreaker situation remains precarious, fraught with unknowns. Tough icebreaking conditions continue on the approach to McMurdo due to semi-blocking by a large iceberg. At least one heavy icebreaker is required. USCGC Polar Sea is out of service for the indefinite future (perhaps permanently), USCGC Polar Star is increasingly fragile (and at the moment awaiting significant annual maintenance which has not yet been authorized/funded), and USCGC Healy, besides not truly being of the icebreaking capability required for the McMurdo break-in, is booked solid for maintenance and Arctic science support.

Steve Ackley provides some anecdotal information regarding this year's Antarctic operations at McMurdo, noting contract support using the Russian icebreaker Krasin as well as the Polar Star. [See <http://nyjtimes.com/Stories/2005/RussianIceBreakerAidsUSShip.htm> for one point of view. Another article is at <http://www.arcop.fi/news.htm#080205>.] It appears the channel breaking and clearing went smoothly despite the nearly 70 miles of ice that needed to be traversed. The icebreakers, cargo vessel, and tanker made it into the ice wharf at McMurdo, offloaded and departed by middle of February. Steve notes that polynyas opened along the ice channel which apparently made operations easier, however, second year fast ice extends further out than the 11 or so miles from last year and so his view is that there is no expectation of easier ice conditions in the next season, so we might expect the additional support requirement for a second icebreaker to remain in place. All parties seem to be generally satisfied with the support provided by the Krasin this season, and the general expectation is that something of this order may transpire in the next season.

Al Sutherland notes that NSF issued a Request for Information (RFI) for icebreaking services for the next six years [see http://www.nsf.gov/about/contracting/dcca_050044.doc], requested a response by 4 April, and has already received one serious response.

Al also notes that excellent, high resolution images of McMurdo Sound and the progress of B-15 may be found at <http://rapidfire.sci.gsfc.nasa.gov/subsets/?RossSea/>. He finds the latest images encouraging because the northern tip of B-15A (a large iceberg partially blocking McMurdo access) is well north of recent positions, indicating continued movement, and that

images show the ice has blown out of all but the last 11 or so miles of Southern McMurdo Sound. If this holds, the break-in next year may mostly be through first year ice, unless icebergs position themselves to block the route used this past year.

Reiterating from the November 2004 report to the AICC: A longer term solution for the McMurdo break-in may not be in place for 5-7 years at least. Thus the present situation must be addressed. A one-time miss on breaking through the channel could permit an increase in multi-year ice in the channel, complicating future break-outs. And a one-time miss on refueling McMurdo could potentially shut down much US Antarctic science for as much as 4-5 years (i.e. nearly all continent research not staged out of Palmer Station). Thus the situation is critical. Currently the annual McMurdo offload is 9,000,000 lbs of ship cargo and 55,000,000 lbs of fuel. The ships which provide these must get within at least 7 miles of McMurdo (there are 7 miles of hoses to connect to tankers).

The situation is compounded for marine scientists by a growing inventory of major Antarctic science issues which can be addressed best with icebreaker support beyond that supplied by the Palmer. As the AICC knows, preliminary scientific and conceptual planning for a science icebreaker with greater science and icebreaking capabilities than represented by the Palmer moved forward in recent years, but has been tabled for the moment, while an overall view and plan is readied. Certainly, many scientists would like to see the overall US needs for Antarctic icebreaker support taken into consideration in whatever configuration of vessels is eventually put into place. NSF is moving internally and with its advisory committees to help ensure that the salient issues are addressed in its advice and actions regarding polar icebreaker support. There is also a study of US polar icebreaking needs - focused in large part but not exclusively on the Coast Guard - being undertaken soon under the auspices of the National Academy of Sciences.

There are many issues and considerations - not to mention unknown future events - which will affect the outcome of this process, and ultimately the icebreaker support for US polar science. Massive amounts of funding and will are required. It will be interesting to see where we stand on these matters in five years time.