

# I. Ships and Aircraft

---

*Section I of the Modifications of Activities Planned for 2004-2005  
lists any changes to ship and aircraft usage planned for this time  
period.*

## **Ships**

The US Coast Guard Icebreaker *Polar Star* arrived McMurdo this season to support cutting and clearing of the channel due to extremely heavy ice conditions in the Ross Island area. The Resupply Vessel *American Tern* arrived McMurdo on February 03, and completed vessel operations on February 08. The *American Tern* sailed on February 09 for Port Lyttleton, NZ.

### ***R/V Knorr***

The Research Vessel *Knorr* is a United States Navy-owned ship operated by the Woods Hole Oceanographic Institution (WHOI) for the ocean research community. Launched in 1968, delivered to WHOI in 1970 and completely overhauled in 1991, *Knorr* conducts worldwide oceanographic research in biology, chemistry, geology and geophysics, physical oceanography, and ocean engineering. It is equipped with sophisticated navigation and communication systems and can accommodate a wide variety of scientific projects. The *Knorr* is of United States Registry and an ABS inspected vessel with a gross registered tonnage of 2,518, length of 85 meters, draft of 5 meters and a beam of 14 meters. This vessel has 3,000 shaft horsepower driving two Lips diesel-electric azimuthing stern thrusters and a Lips retractable azimuthing bow thruster. The vessel is a multidisciplinary research platform with a crew of 22 and accommodations for 34 scientists. It is designed for year-round operations with the capability to handle equatorial to polar region science programs.

Ship's Master: Captain Arthur Colburn

## **Research Capabilities**

The R/V Knorr has 2,756 square feet of laboratory space and 945 square feet of science storage to handle a designed science load of 170 tons of scientific equipment. The vessel has (2) Northstar 941XD GPS with differential capability, (2) Trimble Tasman P(Y) P-Code GPS, Northstar WAAS GPS and Furuno GP-90D WAAS/dGPS. The vessel also has a Kongsberg SDP10 Dynamic positioning system. Scientific instrumentations such as a RDI 75kHz Vessel-Mounted Acoustic Doppler Current Profiler, Knudsen 320B/R echo sounder with digital data logging and EPC graphic recorder, IMET meteorological sensor system, Seabeam 2100 multibeam swath bathymetry system, Terascan satellite imaging system, INMARSAT, Iridium and HighSeasNet data and internet communication are some of the scientific instrumentation aboard for researchers. A Northern Line trawl winch, twin Markey Desh-5 winches, three cranes and a starboard hydroboom are available for deploying scientific equipment over the side. The main working decks provide 3,640 square feet of outside working space with the capacity to handle up to six, twenty-foot laboratory vans.

## **Scientific Program in the Antarctic Treaty Area**

### **Intended Tracks and Schedule**

The R/V Knorr will be operating in the Southern Ocean and mid latitudes of the Southern Pacific Ocean during the 2005 and 2006 operational period of the AAIW program. Ports of Call include Punta Arenas and Puerto Montt, Chile. The R/V Knorr will operate in the Northern Pacific in the interim between the 2005 and 2006 program. Additional information on the cruise plan, tracks and stations can be found online at: <http://www-pord.ucsd.edu/~ltalley/aaiw/>

## **Aircraft**

During Winfly (August) the USAP used 4 C-17 missions to move people and cargo between Christchurch and McMurdo. The USAF C-141 completed 14 missions and the C-17 completed 21 missions between Christchurch and McMurdo during October and November. The USAF C-141 returned to McMurdo completing 11 missions during

January and February, and the USAF C-17 returned to McMurdo completing 11 missions during February. The Royal New Zealand Air Force completed 11 missions between Christchurch and McMurdo during November and December.