

traverses in Antarctica for research data gathering purposes.

The USAP intends to develop and utilize an overland traverse capability to cost-effectively complement existing airlift resources for the resupply of South Pole station, in the process develop the equipment, knowledge and expertise to complement the support for future scientific research similar to the recent ITASE experience. Each year, the USAP provides extensive logistical support to resupply existing facilities, establish or decommission temporary field camps, and provide specialized support to scientific research at numerous field sites. Because the overland traverse and airlift transport mechanisms are complementary, the USAP intends to fully develop the surface traverse capability and utilize one or a combination of the two, depending on the specific needs of the mission and the environmental conditions.

For example, the USAP currently relies exclusively on the use of ski-equipped LC-130 cargo aircraft to transport personnel, fuel, construction materials, and other supplies 1,600 kilometers from McMurdo Station to the Amundsen-Scott Station at the South Pole. The LC-130 aircraft transport cargo quickly and reliably but in the case of the South Pole, the aircraft consumes more fuel for each liter of fuel delivered vs the surface traverse. In other words, the benefits of the aircraft's speed in transporting cargo may be offset by its relatively high fuel consumption particularly when the time sensitive delivery of cargo is not a necessity. The USAP intends to have the overland traverse capability available and utilize it to transport cargo to the South Pole or other locations where airlift support may not be the optimum transport choice. In so doing, the USAP anticipates the increased availability of airlift support to expand science and related missions in Antarctica.

The Director of the Office of Polar Programs of the National Science Foundation intends to prepare a Comprehensive Environmental Evaluation (CEE) within the procedures of the Protocol on Environmental Protection to the Antarctic Treaty and consistent with implementing regulations for the National Environmental Policy Act (NEPA) for the decision to develop overland traverse capabilities in Antarctica.

**DATES:** The final Comprehensive Environmental Evaluation is expected to be available to the public approximately mid-January 2004. Comments on this notice of intent will be of most use if

they are received before December 10, 2003.

**ADDRESSES:** Written comments should be submitted to: Dr. Polly A. Penhale, Program Manager, Office of Polar Programs, Room 755, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230.

**FOR FURTHER INFORMATION CONTACT:** Dr. Polly A. Penhale at the Office of Polar Programs, National Science Foundation TEL: (703) 292-8033, FAX: (703) 292-9080, EMAIL: [ppenhale@nsf.gov](mailto:ppenhale@nsf.gov).

**SUPPLEMENTARY INFORMATION:** The National Science Foundation (NSF) manages and funds United States activities in Antarctica. The NSF is responsible for the U.S. Antarctic Program (USAP) as well as operation of three active U.S. research stations in Antarctica and a number of outlying facilities and unmanned instrumentation sites. These facilities are operated to support research efforts in aeronomy and astrophysics, biology and medicine, ocean and climate studies, geology and geophysics, glaciology and the Long-Term Ecological Research (LTER) program. McMurdo Station is the USAP's largest facility and a central supply hub supporting many of these outlying facilities.

Each year the USAP operates various aircraft in Antarctica to logistically support scientific research on the continent. The USAP operates ski-equipped LC-130 Hercules aircraft (for heavyweight or bulky cargo missions) as well as DeHavilland Twin Otter aircraft. Helicopters are also operated and, due to their limited range and transport capability, are primarily assigned missions in the McMurdo area and Dry Valleys. The aircraft are only flown during the austral summer operating season, typically from October through February. In general, larger field camps that are used as base facilities for scientific research activities are only established at locations which can be safely accessed by aircraft, while smaller field camps (i.e., tent camps) may be supported by aircraft or small tracked vehicles (e.g., Spryte, Piston Bully, snowmobiles) operating from a base camp.

The LC-130 is the largest ski-equipped cargo aircraft available to the USAP that is capable of operating on snow-covered field sites in Antarctica. The LC-130 has 105 m<sup>3</sup> of cargo space (12.3 m long, 3.1 m wide, 2.7 m high) and can safely transport up to and 11,800 kg of cargo.

During the past several years, the USAP has operated an average of 400 LC-130 missions per year representing

approximately 3,000 flight hours. The majority of these LC-130 missions were conducted at the South Pole (280 missions), while the remainder (120 missions) were flown to a variety of locations providing support to outlying facilities and research activities. The Amundsen-Scott Station is supported exclusively by the LC-130 aircraft and in recent years has received 3,500,000 kilograms of cargo annually. The surface capability would change the ratio of missions.

The USAP currently maintains a limited overland traverse capability. Traverses are performed annually to resupply the Black Island Telecommunications facility, located approximately 35 kilometers from McMurdo Station, and the Marble Point Refueling Facility, approximately 100 kilometers from McMurdo. Since 1999, the U.S. has participated in traverse activities for scientific research applications (ITASE). To support the ITASE science traverse, LC-130 aircraft provided airdrops of fuel and other materials at strategic locations in the field.

The USAP is currently engaged in a "proof of concept" program to evaluate equipment and procedures needed to support a traverse capability and a route from McMurdo Station to the South Pole over the Leverett Glacier. Based on the experience gained through the proof of concept and from previous traverses conducted by the U.S. and other nations, the USAP intends to develop a traverse capability and enhance the program's transportation strategy by optimally combining airlift and overland traverse capabilities to suit the specific needs and conditions of the mission. In addition, the successful development of overland traverse resources may allow the USAP to provide logistical support or perform research activities at locations or during time periods which are not currently possible.

Relative to this environmental review, the scale of an overland traverse intended to be used for resupply or scientific research missions would typically include several motorized tracked vehicles towing sleds or trailers which contain fuel for the tractors, living and working modules for the traverse personnel, and cargo. Overland traverses used for resupply missions would typically follow established routes. Traverses used for scientific purposes would follow routes based on the intended research and may depend on airdrops or strategically placed caches for periodic resupply.

Each traverse would have the resources and equipment to refuel the