Appendix IV.

Summary of Recommendations

Recommendation I: The U. S., as a matter of national policy, should maintain a continued year-round presence in Antarctica, including at the South Pole.

Recommendation II: Promptly initiate steps to eliminate safety and health shortfalls at all U. S. facilities in Antarctica and, because of their magnitude, particularly at South Pole Station.

Recommendation III: The U. S. should continue to maintain permanent, facilities in Antarctica at Palmer, McMurdo and the South Pole.

Recommendation IV: International cooperation in scientific research and logistics support should be encouraged, but permanent facilities and infrastructure at permanent U. S. sites in Antarctica should be provided by and maintained by the U. S.

Recommendation V: The existing South Pole Station should be replaced with an Optimized Station. This construction can be accomplished by the year 2005 if the necessary budgetary steps are taken immediately (to initiate funding for the period FY98-FY02).

Recommendation VI: After having taken all prudent steps to reduce the cost of a new facility at South Pole Station and to seek other cost reductions to fund such a station, there remains a funding shortfall; therefore, additional funds in the amount of $95M (then-year dollars) over the five-year period FY98-FY02 should be added to the NSF budget to permit the phased replacement of the existing South Pole Station.

Recommendation VII: The NSF should prepare, and annually update, a long-range plan that coordinates science, support and facility needs to carry out the U. S. Antarctic Program. Implementation funds should be provided to support the long range plan.

Recommendation VIII: To the greatest extent possible, all support activities in Antarctica should be placed under a single prime contractor — with oversight by a single individual/office designated by the NSF. Subsidiary organizational elements should be restructured to minimize overlap, duplication and interfaces.

Recommendation IX: The NSF should implement mechanisms to include science support costs as an explicit rather than implicit portion of the evaluation of proposed scientific projects that make up the USAP.

Recommendation X: The NSF and its contractor, Antarctic Support Associates, should review those functions no longer to be performed by the DOD to ensure that those functions are transferred to the recipient organization in the most efficient possible manner...or, where possible, eliminated. Similarly, the U. S. Coast Guard's operating budget should continue to absorb the level of fixed icebreaker costs that exceed reimbursement.

Recommendation XI: The NSF should seek advance arrangements with governmental and commercial geostationary satellite operators to make such satellites systematically available as they near the end of their economic commercial life.

Recommendation XII: The U. S. Government, presumably the Department of State, should convene those U. S. Government organizations having interests in Antarctica and develop a policy regarding the increased tourism to be expected in Antarctica in the years ahead and, further, should work with other interested governments to address this issue in a proactive and cooperative manner.

Appendix V.

Presentations and Interactions

The Panel, in its deliberations, was greatly assisted by presentations by, or conversations with, the following individuals:

NATIONAL SCIENCE FOUNDATION

Dr. Joseph Bordogna, Acting Deputy Director
Mr. Bill Bryant, Contracting Officer, Contracts Policy and Oversight
Dr. Karl Erb, Senior Science Advisor, Office of the Director, and Liaison to the Panel
Mr. Guy Guthridge, Executive Secretary to the Panel, Office of the Director
Mr. Joseph Kull, Director - Budget and Finance Division, and Chief Financial Officer
Dr. Neal Lane, Director
Mr. Larry Rudolph, General Counsel

From the Office of Polar Programs

Mr. David Bresnahan, Systems Manager, Operations and Logistics
Mr. Frank Brier, Facilities, Engineering and Construction Program Manager
Mr. Erick Chiang, Acting Deputy Director
Mr. Dwight D. Fisher, Acting Section Head, Polar Research Support Section
Ms. Joyce Jatko, Environmental Officer
Dr. Harry Mahar, Safety and Health Officer
Mr. Al Martin, NSF Station Manager, McMurdo Station, Antarctica
Ms. Altie Metcalf, Budget and Planning Officer
Dr. Dennis Peacock, Section Head, Antarctic Sciences Section
Mr. John Rand, South Pole Engineering Projects Manager
Mr. Patrick D. Smith, Technology Development Project Manager
Dr. Cornelius W. Sullivan, Director
Mr. Alexander Sutherland, Ocean Projects Manager

NSF SUPPORT

Colonel Archibald Berberian, Chief of Staff, New York Air National Guard
Dr. William Detrich, Chair, Palmer Station Users Committee
Dr. Jay Farmwald, Director of Health Facilities, Alaska Public Health Service
Dr. Hank Grant, Decision Support Associates
Dr. Dave Hofmann, Director, Climate Monitoring and Diagnostics Laboratory, NOAA
Mr. Jim Holik, Science Cruise Coordinator, Antarctic Support Associates
Ms. Kate Jensen, Former NOAA Field Team Leader at South Pole Station
Mr. Jon Kumin, Kumin and Associates
Dr. Donal Manahan, Chair, McMurdo Area Users Committee
Dr. Doug Martinson, Chair, Research Vessel Oversight Committee
Dr. Robert Morse, Chair, South Pole Users Committee
Dr. Samuel Mukasa, Chair, Office of Polar Programs Advisory Committee
Mr. Jerry Mullins, Polar Programs Manager, U.S. Geological Survey
Ms. Ann Peoples, Former ASA Station Manager for McMurdo and Palmer Stations
Ms. Karen Schwall-Meyers, Former ASA Station Manager, McMurdo Station
Captain C. Hugh Smith, USN, Commanding Officer, Naval Support Force Antarctica
Dr. H. Guyford Stever, Former Director, National Science Foundation

WASHINGTON, D. C., AREA

Dr. Robert Bindschadler, Glaciologist, NASA
The Honorable George E. Brown, Jr., U. S. House of Representatives
Mr. Harlan Cohen, Department of State
Dr. Jack Gibbons, Director, Office of Science and Technology Policy
Dr. T. J. Glauthier, Office of Management and Budget
The Honorable Jerry Lewis, U. S. House of Representatives
The Honorable Barbara A. Mikulski, United States Senate
Dr. Ernie Moniz, Associate Director for Science, Office of Science and Technology Policy
Dr. William Nitze, Assistant Administrator for Environmental Activities, EPA
Mr. R. Tucker Scully, Director of the Office of Oceans, Department of State
The Honorable F. James Sensenbrenner, Jr., U. S. House of Representatives
Mr. Brad Smith, Director, Strategic Environmental R&D Program Office, Arlington, Virginia

Mr. George Troup, Embassy of New Zealand, Washington, D. C.
Ms. Alexandra Tidswell, Embassy of New Zealand, Washington, D. C.
The Honorable Timothy E. Wirth, Assistant Secretary of State for Global Affairs
Ambassador John Wood, Embassy of New Zealand, Washington, D.C.

DENVER, COLORADO

Antarctic Support Associates (ASA)

Mr. Sam Feola, Director, Logistics
Mr. Pat Haggerty, Project Manager, South Pole Station Modernization
Mr. Ronald G. Koger, Project Director
Mr. John Lomax, Procurement
Mr. Craig Martin, Director, Engineering
Ms. Janet Phillips, Area Manager, Palmer Station
Mr. Chris Rhone, Director, Information Systems
Mr. Chris Shepherd, Science Support
Mr. Blair Thueson, Budget and Planning Processes

CHRISTCHURCH, NEW ZEALAND

Mr. Ian Diamond, General Manager, Engineering, Air New Zealand
Ms. Kim Fassbender, Program Coordination Specialist, NSF
Mr. Graeme Hills, Component Maintenance Manager, Air New Zealand
Mr. Richard Ison, Aircraft Maintenance Manager, Air New Zealand
Mr. Mike McIlroy, Supervisor, Clothing Distribution Center, ASA
Mr. Ian Matthews, Manager, Marketing, Air New Zealand
Mr. Brian Perry, Product Support Engineer, Air New Zealand
CDR John Stotz, USN, Commanding Officer, Naval Antarctic Support Unit

MCMURDO STATION, ANTARCTICA

Mr. Art Brown, Manager, Specialized Services Support, NSF
Mr. Earl Ferguson, Supervisor, Inventory Management, ASA
Captain Jeffrey Garrett, U. S. Coast Guard, Commanding Officer, USCGC *Polar Sea*
Dr. Jack Gibbons, Science Advisor to the President
Mr. Bill Haals, Operations Manager, ASA
Mr. John Hatcher, Manager, Waste Management, ASA
Mr. Joe Heil, Supervisor, Field Operations Communication Center, ASA
Dr. Julie Palais, Glaciology Program Manager, National Science Foundation
Mr. Mitch Perry, Manager, Black Island Communications Ground Station
Mr. Tom Quinn, Fixed Wing Coordinator, ASA
Mr. Jim Raml, Supervisor, Marble Point
Mr. Mark Reese, Office of Aircraft Services, Department of the Interior
CDR Bill Stedman, USN, Commanding Officer, Antarctic Development Squadron, Six (VXE-6)
Mr. Brian Stone, Manager, Terminal Operations, ASA
Dr. Mario Zuchelli, Director, Italian Antarctic Program

ALBERT P. CRARY SCIENCE & ENGINEERING CENTER, McMurdo

Dr. Pat Bryan, Biochemist, Florida Institute of Technology
Mr. Rudy Dichtl, Manager, Science Technical Services, ASA
Dr. Nelia Dunbar, Principal Investigator, New Mexico Institute of Mining and Technology
Dr. Diana Freckman, Principal Investigator, Desert Research Institute
Mr. Glenn Grant, Science Technician, ASA
Dr. Robert Holmes, University of Wisconsin
Mr. Larry Hothem, U.S. Geological Survey
Mr. Bjorn Johns, UNAVCO (precision Global Positioning Systems service)
Dr. Steve Kottmeier, Manager, Laboratory Sciences, ASA
Dr. Bill McIntosh, New Mexico Institute of Mining and Technology
Mr. Dave Mikesell, Analytical Chemist, ASA
Mr. Robbie Score, Sr. Assistant Supervisor, Laboratory Operations, ASA
Mr. Chris Shepherd, Director Science Support, ASA
Mr. Dom Tedeschi, Teacher (Antarctic education and research integration)
Mr. Mike Varney, Facilities Engineer, ASA

SCIENCE SUPPORT IN ANTARCTICA

Ms. Kathy Young, Berg Field Center, ASA
Mr. Tom Pennel, Allied Signal
Ms. Robin Abbott, Helicopter Coordinator, ASA
Mr. Hardy Foster, Allied Signal
Mr. Jack Hawkins, Project Manager, Petroleum Helicopters, Inc. (PHI)
Mr. Brooks Montgomery, Field Safety Training, ASA
Mr. Ron Nugent, Mechanical Engineering Center, ASA
Ms. Jill Vereyken, Field Services Manager, ASA
Dry Valleys/Lake Hoare
Ms. Paula Adkins, Long Term Ecological Research, ASA

Dr. Diana Freckman, Principal Investigator, Desert Research Institute
Dr. Beth Hartman, Department of Earth Sciences, Boston University
Dr. Dave Marchant, Principal Investigator, Boston University
Dr. Diane McKnight, Desert Research Institute
Dr. Sarah Mills, Department of Earth Sciences, Boston University
Dr. Sophie Webb, H.T. Harvey and Associates
Dr. Stephanie Zasor, H.T. Harvey and Associates

SCOTT BASE (Antarctica New Zealand)

Mr. Julian Tangaere, Manager

SOUTH POLE STATION

Mr. Lester Bracey, Supervisor, Food Service
Mr. Chris Cleavelin, Science Technician, ASA
Ms. Sandra Collins, Science Technician, ASA
Mr. Neil Conant, Communications Operator
Dr. Hugh Cowan, Station Physician
Mr. David Fischer, Area Manager, ASA
Ms. B.K. Grant, Acting Information Systems Supervisor, ASA
Mr. Drew Hampton, Heavy Equipment Mechanic
Dr. Doyal Harper, Principal Investigator, Center for Astrophysical Research in Antarctica
Ms. Shawndra Holmberg, Safety, Environment, and Health Coordinator
Ms. Gloria Hutchings, Manager, Station Stores, ASA
Mr. Martin Lewis, Operations Manager, ASA
Ms. Diana Logan, Supervisor, Logistics, ASA
Mr. Jeff Lutz, Senior Meteorologist, ASA
Mr. Don Neff, Science Coordinator, ASA
Dr. Robert Pernic, Center for Astrophysical Research in Antarctica
Mr. Chris Rock, Facilities Engineer, ASA
Dr. Rolf Sinclair, NSF Representative
Ms. Judy Smith, Inventory Control Specialist
Dr. Antony Stark, Principal Investigator, Smithsonian Astrophysical Observatory
Dr. Wayne Sukow, NSF Representative
Mr. Paul Sullivan, Science Technician, ASA
Mr. Carlton Walker, Facilities, Maintenance and Construction Supervisor, ASA
Ms. Paula Walker, Senior Administrative Coordinator, ASA

OTHER U. S. LOCATIONS / ORGANIZATIONS

Dr. Sridhar Anandakrishnan, Pennsylvania State University
Dr. T. Bania-Bu, Smithsonian Astrophysical Observatory
Dr. Paul Berkman, Byrd Polar Research Center, Ohio State University
Mr. Mark Boland, NOAA
Dr. William Cassidy, University of Pittsburgh
Mr. Paul J. Charpentier, University of Illinois
Mr. Mike Courtemanche, ASA
Dr. Ralph Harvey, Principal Investigator, Case Western Reserve University
Dr. Peter Holden, University of California, Davis
Dr. Anita Jones, Deputy Director of Defense for Research and Engineering, DoD
Dr. Barclay Kamb, Principal Investigator, California Institute of Technology
Dr. Deneb Karentz, University of San Francisco
Dr. Albrecht Karle, University of Wisconsin
Mr. Tim Makovicka, Principal Investigator, University of Nebraska
Dr. Carol Raymond, Principal Investigator, Jet Propulsion Laboratory
Dr. Raymond Smith, Principal Investigator, University of California, Santa Barbara
Dr. Donald Voigt, Pennsylvania State University
Dr. Ed Waddington, Principal Investigator, University of Washington
Dr. Wes Weather, University of California, Davis

Appendix VI.

International Agreements: Excerpts

THE ANTARCTIC TREATY, signed on 1 December 1959 and entered into force on 23 June 1961, establishes the legal framework for management of Antarctica. Administration is carried out through consultative member meetings - the 21st Antarctic Treaty Consultative Meeting was in the Hague, Netherlands, in May 1996.

Currently, there are 43 treaty member nations: 26 consultative and 17 acceding. Consultative (voting) members include the seven nations that claim portions of Antarctica as national territory (some claims overlap) and 19 nonclaimant nations. The U. S. and some other nations that have made no claims have reserved the right to do so. The U. S. does not recognize the claims of others.

The year in parentheses indicates when an acceding nation was voted to full consultative (voting) status, while no date indicates the country was an original 1959 treaty signatory. Nonclaimant consultative nations are - Belgium, Brazil (1983), China (1985), Ecuador (1990), Finland (1989), Germany (1981), India (1983), Italy (1987), Japan, South Korea (1989), Netherlands (1990), Peru (1989), Poland (1977), South Africa, Spain (1988), Sweden (1988), Uruguay (1985), the U. S., and Russia. Claimant nations are - Argentina, Australia, Chile, France, New Zealand, Norway, and the U. K.

Acceding (nonvoting) members, with year of accession in parentheses, are - Austria (1987), Bulgaria (1978), Canada (1988), Colombia (1988), Cuba (1984), Czech Republic (1993), Denmark (1965), Greece (1987), Guatemala (1991), Hungary (1984), North Korea (1987), Papua New Guinea (1981), Romania (1971), Slovakia (1993), Switzerland (1990), Turkey (1996), and Ukraine (1992).

Article 1: area to be used for peaceful purposes only; military activity, such as weapons testing, is prohibited, but military personnel and equipment may be used for scientific research or any other peaceful purpose

Article 2: freedom of scientific investigation and cooperation shall continue

Article 3: free exchange of information and personnel in cooperation with the UN and other international agencies

Article 4: does not recognize, dispute, or establish territorial claims, and no new claims shall be asserted while the treaty is in force. No activities while the Treaty is in force shall constitute a basis for asserting, supporting, or denying a claim

Article 5: prohibits nuclear explosions or disposal of radioactive wastes

Article 6: includes under the treaty all land and ice shelves south of 60 degrees south

Article 7: treaty-state observers have free access, including aerial observation, to any area and may inspect all stations, installations, and equipment; advance notice of all activities and of the introduction of military personnel must be given

Article 8: allows for jurisdiction over observers and scientists by their own states

Article 9: frequent consultative meetings take place among member nations

Article 10: treaty states will discourage activities by any country in Antarctica that are contrary to the treaty

Article 11: disputes to be settled peacefully by the parties concerned or, ultimately, by the ICJ

Articles 12, 13, 14: deal with upholding, interpreting, and amending the treaty among involved nations

Other significant international agreements under the Antarctic Treaty system:

Conservation of Seals

Under the Antarctic Treaty, the Convention for the Conservation of Antarctic Seals entered into force in 1978. This convention prohibits the taking of some species and limits the take of others.

Whale Sanctuary

In 1994 the International Whaling Commission designated the southern ocean south of 40°S (south of 60°S between 50°W and 130°W) as a whale sanctuary. Commercial whaling is not allowed in the sanctuary.

Marine Living Resources Convention

The Convention on the Conservation of Antarctic Marine Living Resources (CCAMLR) is an international agreement to assure that (1) any harvesting or associated activities in Antarctic waters will be done in such a way that the size of the harvested species will not fall below levels that will assure stable recruitment and (2) the ecological relationships among harvested, dependent, and related populations will be maintained. The USA is a ratifying nation. Title III of Public Law 98-623 (the Antarctic Marine Living Resources Convention Act of 1984—16 USC 2431 et seq.) provides the legislative authority necessary to implement the convention in the USA. The law makes it unlawful to harvest marine species in violation of the convention, and it provides for certain other activities. Marine biologists, other marine scientists, and ship operators should be familiar with this law.

Protocol on Environmental Protection

The Protocol on Environmental Protection to the Antarctic Treaty and its five annexes respond to the need for a comprehensive system to protect the Antarctic environment. The parties to the Antarctic Treaty held a special consultative meeting to discuss and explore proposals for protection of the Antarctic environment and its dependent and associated ecosystems. This meeting consisted of several sessions held over a year. At the final session in Madrid, Spain, in October 1991, representatives of the Antarctic Treaty nations signed the Protocol on Environmental Protection to the Antarctic Treaty, including annexes I-IV, which cover environmental impact assessment, conservation, waste disposal and management, and prevention of marine pollution. Annex V (special area protection and management) was adopted by the 16th Antarctic Treaty consultative meeting, also held in October 1991. In the Protocol, the representatives agree to means for providing comprehensive protection of Antarctica's environment and dependent and associated ecosystems in order to preserve the region as a natural reserve devoted to peace and science. The protocol bans mining (see section 5.2).

The protocol will enter into force when all the signatory nations deposit their instruments of ratification. U.S. PL-104-227, the "Antarctic Science, Tourism, and Conservation Act of 1996," signed 2 October 1996 by the President, implements the provisions of the Protocol. The Senate had already given its advice and consent to ratification of the Protocol. Deposit of the U.S. ratification with the Antarctic Treaty System awaits completion of regulations pursuant to PL-104-227.

To the extent possible, the U.S. complies with the Protocol. The U.S. legislation when enacted may contain provisions different from those in the Protocol.

Appendix VII.

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GLOSSARY

AESOPS	Antarctic Environment and Southern Ocean Process Study
AMANDA	Antarctic Muon and Neutrino Detector Array
ANG	Air National Guard
ASA	Antarctic Support Associates, Inc.
ATC	Air traffic control
CARA	Center for Astrophysical Research in Antarctica
CCAMLR	Convention on the Conservation of Antarctic Marine Living Resources
CFCs	Chlorinated fluorocarbons
CRAMRA	Convention on the Regulation of Antarctic Mineral Resources Activities
DOD	Department of Defense
DU	Dobson units
FTE	Full-time-equivalent
FY	Fiscal year (begins 1 October in U.S. Government)
IGY	International Geophysical Year, 1957-1958
JGOFS	Joint Global Ocean Flux Study
LC-130	Ski-equipped C-130 (four-engine transport aircraft)
LEO	Low Earth orbit
LTER	Long term ecological research
M	Million
NASA	National Aeronautics and Space Administration
NOAA	National Oceanic and Atmospheric Administration
NSC	National Security Council
NSF	National Science Foundation
NSFA	Naval Support Force Antarctica
NSTC	National Science and Technology Council
NYANG	New York Air National Guard
OPP	Office of Polar Programs, NSF
PHI	Petroleum Helicopters Inc.
R/V	Research vessel
SEH	Safety, environmental protection, and health
TOMS	Total ozone mapping spectrometer
USAF	United States Air Force
USAP	U. S. Antarctic Program
USARP	U. S. Antarctic Research Program (Component of USAP)
USCG	United States Coast Guard
USGS	United States Geological Survey
USNS	United States Naval Ship
VXE-6	Antarctic Development Squadron 6, U.S. Navy
WAIS	West Antarctic Ice Sheet