

FACILITIES AND SERVICES AVAILABLE TO NSF-SPONSORED PROJECTS IN GREENLAND

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INTRODUCTION

This report provides a general overview of services available at Sondrestrom, Thule and remote field sites in Greenland. The intent is to provide enough general information to assist Principal Investigators (PIs) in planning for their anticipated field work.

It is important to remember that procedures and support levels do change throughout the year. We encourage everyone to contact PICO early and on a regular basis so we may better assist you with your field planning.

The Polar Ice Coring Office (PICO) at the University of Alaska Fairbanks (UAF) provides logistics planning, remote camp equipment and coordination of services for all National Science Foundation (NSF)- sponsored research projects in Greenland. PICO is stationed in Greenland to act as liaison between NSF-sponsored personnel and support agencies.

It is also important to remember that while in Greenland, each project's participants are guests, not only of the U.S. Air Force but the Greenlandic and Danish governments as well. Since none of these organizations are under a formal obligation to provide support for U.S. scientific research groups, you should extend normal courtesies in dealing with your hosts.

Although it often seems easier to bypass the formal channels in certain situations, it can be detrimental to the overall program to do so. Remember your attitude and actions can have an impact on the support available for future research projects in Greenland.

LOGISTICS AND CLEARANCES

Logistics Support by PICO

PICO serves as the planning and expediting coordinator for NSF-sponsored projects in Greenland. A PICO Field Operations Manager (FOM) is stationed at Sondrestrom Air Base for most of the period April-September, but may not be available at all times to support every transient scientist. Administrative support is provided to all science projects by the PICO staff at Fairbanks. This administrative support includes:

- Obtaining military travel authorizations
- Obtaining base clearances
- Scheduling and arranging participants' travel
- Moving cargo between the continental U.S. (CONUS) and Greenland
- Coordinating field support requests with the appropriate U.S. Air Force and civilian support contractors in Greenland

Principal Investigators (PIs) should note that PICO-generated support cannot be provided without complete and detailed information as requested in the 1992 Field Requirements and Personnel Information Form.

NOTE: These forms must be returned to PICO no later than January 15.

Clearances

A Project Proposal Data Sheet must be submitted through NSF to the Danish Commission on Scientific Research in Greenland for approval by Danish and Greenlandic authorities for each U.S. science project. This approval authorizes the project to be conducted in Greenland.

PASSENGER TRANSPORT

Personnel Clearances

Clearances required prior to departure to Greenland:

- MAC authorization
- Sondrestrom AB clearance
- Foreign National Clearance (when applicable)

In addition, proper reservations need to be made. Regardless of where research is conducted, or the point of entry into Greenland, all project personnel will be cleared should emergency, weather or operational changes require personnel to transit or receive assistance from the Greenland Air Bases or NAS Keflavik.

Greenland participants are required to submit to PICO the Name, Social Security and Passport Number of each project member at least 60 days prior to deployment. It takes a minimum of 30 days to obtain clearances. The Air Force can refuse admission to the Greenland Air Bases for anyone not properly cleared. These clearances are also necessary for permission to use base housing, dining and recreational facilities.

MAC Flights

U.S. Air Force schedules year round Military Airlift Command (MAC) "Channel" flights:

- MAC Channel flights are the primary mode of transport for NSF-sponsored participants.
- Thule Air Base (THU) is serviced only by MAC Channel flight schedules.
- Most air transport to and from Sondrestrom for NSF projects is via regularly scheduled MAC Channel flights originating at McGuire AFB, Wrightstown, NJ
- Arrangements for personnel and cargo transport must be made by PICO a minimum of 30 days in advance of the travel date
- All MAC flights depart McGuire AFB (It is recommended to fly into Philadelphia with Newark as second choice)
- Passenger cost (one way):
 - McGuire to Keflavik \$393
 - McGuire to Thule \$377
 - Sondrestrom to Thule \$76
 - McGuire to Sondrestrom \$310
- Individual projects are expected to cover the costs of participants' transportation within CONUS from grant funds.

Flight Schedule:

- McGuire (WRI) to Sondrestrom (SFJ) departs McGuire AFB Monday and Thursday (unless a holiday) at 5:40 A.M. and arrives Sondrestrom at 12:40 P.M.

- Sondrestrom (SFJ) to McGuire (WRI) departs Sondrestrom each Tuesday and Thursday at 3:20 P.M. However, the Thursday flight overnights in Thule.

NOTE: This schedule does change without prior notice. For an updated schedule, contact the PICO/UAF Office, (907) 474-5585.

Baggage Allowance Information:

- Two pieces of checked baggage (per passenger) not to exceed 70 pounds each OR 62 linear (length + height + width) inches each
- Bags larger than 62 inches and/or heavier than 70 pounds will be counted as two pieces
- Checked baggage exceeding the weight criteria is counted as one piece for each increment of 70 pounds
- **NO ONE PIECE OF BAGGAGE CAN EXCEED 100 LBS. ANY PIECES OVER THIS WEIGHT WILL NOT BE TRANSPORTED--NO EXCEPTIONS.**
- PICO must inform the MAC reservation office of any excess baggage accompanying a passenger when the reservation is made. Passengers must inform PICO as to number of pieces, weight and dimensions of each piece at least 30 days in advance of their departure. When in doubt, plan for the worst case and reduce the requirement later.
- Excess baggage charges are assessed on a per piece basis, based on the passenger fare. Excess baggage piece rate charges for various ranges of passenger fares are as follows:

<u>PAX Fares</u>	<u>Rate Per Piece</u>
\$ 26. - \$ 60.	\$ 10. Minimum
\$ 61. - \$115.	\$ 20.
\$116. - \$170.	\$ 30.
\$171. - \$230.	\$ 40.
\$231. - \$285.	\$ 50.
\$286. - \$340.	\$ 60.
\$341. - \$400.	\$ 65.
\$401. - \$455.	\$ 70.

- After completion of all clearances and reservations, PICO/UAF will send to all passengers a packet that includes:
 - Two (2) "MAC tickets," one for McGuire to Sondrestrom (WRI-SFJ) and one for Sondrestrom to McGuire (SFJ-WRI)
 - Copy of your Area Clearances
 - Extra copy of your MAC Authorization
 - Facilities and Services Available Manual

Ground Transportation to McGuire AFB:

Following are ground transportation options available to McGuire AFB from either the Philadelphia International Airport or the Newark Airport. Please note when making your decision for ground transportation that the bus services provide ample storage for luggage, however, if you are bringing a considerable amount of excess baggage you may want to consider the other options.

Philadelphia International Airport to McGuire AFB:

- Limo Service – \$80.00
- Bus Service – \$10.00
 - Bus service to McGuire AFB includes stops at Ft. Dix and West Hampton before the final destination of McGuire, making it about a two-hour trip. The large tour bus has plenty of room for baggage.
 - Most arrivals into Philadelphia are at Terminal D. Bus tickets can be purchased at the USO counter in the baggage claim area. After purchasing your ticket, proceed to the waiting area near the USO counter where the bus driver will announce the time of departure.
 - There are two bus schedules for travel from Philadelphia to McGuire, since it is served by two separate bus carriers. The schedule is shown in Table 1.

Table 1. Philadelphia/McGuire Bus Schedule

Philadelphia to McGuire

EAGLE (609) 723-2001 Departures		BURLINGTON (609) 723-4227 Departures		
Monday-Friday	Saturday-Sunday	Monday-Friday	Saturday	Sunday
09:30 A.M.	09:30 A.M.	10:45 A.M.	08:00 A.M.	
12:30 P.M.		03:00 P.M.		
03:30 P.M.	03:30 P.M.	05:00 P.M.	12:00 Noon	12:00 Noon
06:30 P.M.		07:00 P.M.		04:00 P.M.
09:00 P.M.	09:00 P.M.	10:00 P.M.	10:00 P.M.	10:00 P.M.

McGuire to Philadelphia

EAGLE (609) 723-2001 Departures		BURLINGTON (609) 723-4227 Departures		
Monday-Friday	Saturday-Sunday	Monday-Friday	Saturday	Sunday
07:30 A.M.	07:30 A.M.	08:30 A.M.	05:30 A.M.	
10:30 A.M.	10:30 A.M.		09:45 A.M.	09:45 A.M.
01:30 P.M.	01:30 P.M.	12:30 P.M.		
03:30 P.M.	03:30 P.M.			02:00 P.M.
05:00 P.M.	05:00 P.M.			
07:30 P.M.	07:30 P.M.			

Newark Airport to McGuire AFB:

- Ground transportation center desk is located in baggage claim area.
- Two private car service companies are located at the ground transportation counter and arrangements for these can be made upon arrival.
- Cost:
 - \$95/Sedan - Not including tolls and tips
 - \$90-120/Stretch limo - Not including tolls and tips
 - \$120-190/Van - Not including tolls and tips
- Public bus service operates from the courtyard just outside of the airport terminal. Travel time is 1 hour and 45 minutes from Newark to McGuire AFB (see Table 2).
 - Bus fare: \$ 6.55
 - Tickets may be purchased from the N.J. Transit representative at the transportation center counter in the baggage claim area. If an agent is not at the counter, tickets may be purchased from the bus driver.

Table 2. Bus #307 Schedule between Newark and McGuire
 1-800-AIR RIDE (1-800-247-7433)
 New Jersey Transit Bus System: 201-762-5100 (out of state)
 1-800-772-2222 (toll free number)

Bus #307 from Newark to McGuire Departures		Bus #307 from McGuire to Newark Departures	
<u>Monday-Friday</u>	Saturday-Sunday	Monday-Friday	Saturday
07:55 A.M.	07:55 A.M.	07:00 A.M.	07:00 A.M.
09:55 A.M.	09:55 A.M.	10:00 A.M.	10:00 A.M.
01:25 P.M.	12:55 P.M.	12:00 P.M.	12:00 P.M.
03:10 P.M.	03:40 P.M.	03:15 P.M.	03:15 P.M.
05:40 P.M.	06:00 P.M.	05:00 P.M.	06:00 P.M.
08:55 P.M.	08:55 P.M.	08:00 P.M.	08:00 P.M.
11:25 P.M.	11:25 P.M.	10:45 P.M.	10:45 P.M.
02:25 A.M.	02:25 A.M.		

Parking at McGuire AFB:

A long-term parking lot for personal vehicles is available at McGuire AFB, just across from the passenger terminal. Although this is not a security lot, McGuire personnel have indicated no problems. Use your best judgment. McGuire AFB does

not require that the vehicle be registered for long-term parking. Just lock the vehicle.

109th TAG Flights

PICO arranges transport of personnel and equipment on a limited space-available basis aboard 109th TAG flights from the New York Air National Guard of Scotia, NY to Sondrestrom and return. This is only as a last minute "emergency" means of transportation. The 109th TAG is under no obligation to support NSF projects in this way, and requests are considered in light of their primary mission requirements. PICO forwards requests for space-available transport to the 109th well in advance of each field season.

CARGO TRANSPORT

Cargo Transport Identification and Requirements to/from Greenland via MAC Channel and the 109th TAG NYANG

Identification Requirements

The following identification code should be stenciled or labeled on three sides of each piece of cargo sent to/from Greenland:

Example: 1 2 3 4 5
NSF/LG/201/GISP2/1-1-92

1. Identification: will always be NSF

2. Institution Code:

LG	PICO Logistics
BSU	Boise State University
CMU	Carnegie Mellon University
CRR	US Army CRREL
DR	PICO Drilling
DRI	Desert Research Institute
MIT	Massachusetts Institute of Technology
NYS	NYS Department of Health
OSU	Ohio State University
PSU	Pennsylvania State University
SCR	Scripps Institution of Oceanography
SNY	State University of NY at Buffalo
SU	Stanford University
SRI	University of Michigan
UAF	University of Alaska Fairbanks
UAZ	University of Arizona
UCB	University of Colorado-Boulder
UCP	University of Copenhagen
UCSD	University of California at San Diego
UMI	University of Miami
UNH	University of New Hampshire
URI	University of Rhode Island
UWA	University of Washington
UWS	University of Wisconsin

3. 2 (for 1992 season) and box number (01, 02, 03, etc.)

4. Final destination: Sondrestrom AB, Thule AB, CONUS, Jakobshavn, Godthaab, GISP2, etc.

5. "No later than" date which states when the cargo must be present on site.

Inventory Requirements

Prepack an equipment inventory as follows:

- Use the serial numbers and/or ID numbers (when available), or a description of contents. This is particularly important when shipping electronic equipment and instrumentation.
- Use institutional letterhead if possible.
- Three copies of this inventory sheet; one for your records, one for U.S. Customs, and one for the PICO representative. (Have them available for the PICO representative upon your arrival in Sondrestrom.)

NOTE: Since Sondrestrom AB is in its final year as a military base, changes to the MAC flights in and out of Sondrestrom can change with little notice. It is anticipated that the MAC channel flights will continue to be regularly scheduled. However, to assure you and your cargo arrive at the required destination, please check with the PICO/UAF office or the PICO/Sondrestrom office, depending on your current location.

Cargo Transport via MAC Channel, McGuire AFB, NJ

All cargo being shipped to Greenland must be at McGuire no later than three weeks prior to the start of your field program. Please contact PICO no later than one week (7 days) prior to your shipping from home so we can initiate the documentation required for your cargo to reach Greenland in a timely manner. If you cannot meet these requirements, we cannot guarantee that your cargo will be in Greenland when you arrive.

All shipments to Greenland require the following for documentation:

- Number of boxes
- Type of packaging for each piece (drum, box, cylinder)
- Weight and cube of each piece (cubic feet = length x height x width (in inches) divided by 1728)
- Description of its contents (instrumentation, clothing, food)
- Anticipated shipping date to McGuire
- Shipping mode to McGuire (airfreight, surface, etc.)
- Requested delivery date to Sondrestrom
- Requested delivery date and final destination if inter-Greenland forwarding required (i.e., GISP2)
- Flash point for hazardous cargo only

Upon receipt of this information, PICO will forward:

- Form 1387 - Military Shipment Label (one for each piece)
- Form 1384 - Transportation Control and Movement Document (TCMD)

Detailed instructions will be provided at the time of shipment.

Hazardous Materials Transport

The transport of hazardous materials to and from your research site requires particular attention to assure that the materials are prepared and packaged properly. Proper packaging and documentation of any hazardous substance is required to safeguard personnel and equipment involved in the movement of your shipment. Proper documentation and packaging of these materials is the **sole responsibility** of the individual shipper. There are severe civil penalties for false or misleading identification of hazardous goods offered for shipment.

Knowing proper documentation and packaging is your responsibility; it is best to begin the process at the time you purchase your chemicals and supplies as follows:

- Confirm first that your vendor or supplier of hazardous goods is aware of safe packaging procedures. Therefore, contact various vendors and select one who is able to properly prepare the shipment for you.
- Include on the Purchase Order statement, "Goods must be packed for air transport in accordance with Code of Federal Regulation-49 (CFR-49)." This procedure can expedite the process but does not remove from you the responsibility of knowing exactly how the material is packaged.
- Each PI may contact Sgt. John Belch, Special Handling at McGuire ((609)724-2665) to describe the material to be shipped. This will be a detailed description including what the product is, type of container and how it is sealed. Sgt. Belch will work with the individual to define transport and packaging requirements according to military regulations. Make sure that these instructions are followed exactly to ensure the safe shipment of this particular cargo.
- Each PI is to contact PICO/UAF (Cargo) [(907)474-5585, FAX (907)474-5582] before shipping anything to McGuire, giving the specific weight, cube, flash point, type of packaging and contents of each box as outlined in this manual.
- Each PI will send the cargo to McGuire, as with normal cargo. However, a different label will be provided that will direct it to the attention of Sgt. John Belch, Special Handling Office for the 1387-2 (dash-2; hazardous cargo) certification.
- Each PI should obtain (in addition to the above listed documentation) four copies of the Material Safety Data Sheet (MSDS) for each hazardous material being shipped. These are usually available from the vendor. Distribution will be as follows:
 - Copy enclosed with Form 1384 (Transportation Control and Movement Document) in the "Packing List Enclosed" envelope affixed to the container
 - Copy to be included with the shipper's documents
 - Copy to be filed in the PICO Office in Sondrestrom
 - Copy to be kept on site with the material

Cargo Transport via 109th TAG, Scotia, New York

Space-available cargo shipments via the 109th TAG are discouraged since negotiations of space on these flights takes place several months prior to the field season.

Ship Transport

Shipment of heavy and/or bulk cargo to Greenland can be done relatively economically via military sealift originating at the Military Ocean Terminal (MOT) in Bayonne, NJ. Ninety (90) days lead time is necessary to ensure timely shipment. The 1992 schedule has not been completed at this time. For an update of departure times, please contact PICO/UAF at (907) 474-5585.

Retrograde Cargo Transport, Greenland-CONUS

Retrograde cargo manifested for transport via military aircraft will include only equipment, samples and baggage specifically used in relation to field work. Personal baggage must be cleared through U.S. Customs on an individual basis. All items purchased in Greenland are to be included in personal baggage.

For project-related cargo, please be prepared to provide the PICO representative in Sondrestrom with the following information:

- Destination - mark for address
- Type of container
- Number of pieces
- Weight and cube of each piece
- Contents of each piece
- Request mode of shipment beyond New York or New Jersey
 - Air Freight
 - Surface Freight
- Your institution's phone number and point of contact for receiving cargo, method for billing (i.e., COD, pre-paid, etc.)

NOTE: We suggest you bring pre-printed return labels from your institution to speed the documentation process for your retrograde cargo.

Cargo is shipped through the MAC Cargo system, and therefore can be up to 21 days en route. As cargo rates are reduced for larger shipments, it is advisable to consolidate shipments when possible. If you are sending hazardous cargo, PICO must be notified at least three weeks prior to shipment to begin hazardous cargo documentation. If you have any difficulty determining whether or not your cargo is hazardous please contact PICO/UAF at (907) 474-5585.

PICO also charters MAC Special Assignment Airlift Missions (SAAM) for specific dates and destinations if the primary-mission scheduling for the 109th TAG allows. The 109th flies C-130 and LC-130 (ski-equipped) Hercules Aircraft. The current hourly charter rate effective August 1991 is \$5,133. Cargo rate by weight is shown in Table 3.

TRANSPORTATION WITHIN GREENLAND

If your project requires transport to areas outside Sondrestrom, arrangements are made with the following local transport authorities:

- **GreenlandAir:** GLAIR operates scheduled fixed-wing and helicopter service from Sondrestrom to most coastal towns and villages within Greenland. Advance reservations are required. Travel arrangements can be made at the SAS terminal on the Danish side or may be prearranged through PICO. Please note that June-August is the peak tourist season in Greenland, so be advised that it may not be possible to depart Sondrestrom via commercial transport on the same day you arrive.
- **Scandinavian Airlines:** SAS provides daily service between Sondrestrom and Copenhagen via DC-10.
- **Coastal Vessels:** Small coastal vessels provide scheduled cargo service to many coastal towns and villages.
- **Chartered and Commercial Aircraft:** With NSF's approval, chartered aircraft can be contracted through PICO to projects that require long-term, exclusive use support. PICO should be advised of your charter needs at least **6 months prior to your anticipated starting date** to allow the preparation of contract specifications and to follow the bid process and selection. In recent years, most charters have been contracted from GreenlandAir, A/S, but other sources are available to meet special requests.

Greenland Air Charter A/S (Glace) provides ad hoc fixed wing and helicopter support on a routine basis throughout Greenland for those projects that require only limited support. Contact PICO for current charter rates.

- **NSF Vehicles:** PICO maintains three vehicles in Sondrestrom: a Ford F-150 pickup, a Ford 3/4-ton crew cab pickup, and a Dodge M-37 4-wheel drive personnel carrier. The PICO Field Operations Manager stationed in Sondrestrom will assign vehicles as requirements are presented. NSF groups must check with the FOM in Sondrestrom for use. Vehicles are not for sightseeing, personal use or personnel transport.
- **Primary Transportation Mode in Sondrestrom:** Foot travel, a few bicycles at the PICO office and bicycle rentals in Sondrestrom are best.

NOTE: The Royal Danish Air Force (RDAF) and other military groups also use the airfield. Commercial airlines flying to Sondrestrom include Scandinavian Airlines (SAS) and GreenlandAir (GLAIR). Icelandic Airlines and GLAIR fly between Reykjavik and Kulusuk, East Greenland. It is also possible to travel with First Air from Canada to Nuuk, then on to Sondrestrom AB.

Table 3: Cargo by the pound (One way)

Origin-Destination	0#-439#	440#-1099#	1100#-2199#
McGuire-Keflavik	\$147.30	\$138.40	\$129.70
McGuire-Thule	\$141.40	\$132.90	\$124.50
McGuire-Sondrestrom	\$116.50	\$109.40	\$102.50

SONDRESTROM AND SURROUNDING AREA GENERAL INFORMATION

Sondrestrom Air Base

In terms of complexity, Sondrestrom is unique. In addition to the Air Force contingent, there are two major Air Force O&M contractors; Greenland Contractors (GC) of Copenhagen, and Felec Services, Inc. of Williamsburg, VA. They maintain most of the support facilities available in Sondrestrom. These groups comprise the "American side" of Sondrestrom. The "Danish side" (1 mile to the North by road) consists of several private Danish companies: SAS, Royal Greenland Trade Department (KNI), GreenlandAir (Glair) and Statoil. The Danish side includes private housing and a combination SAS terminal which houses the Danish Post Office Gronlandsbanken/Bikuben, GLAIR and KNI, and Spedition (domestic air and surface freight). Sondrestrom AB will see its last year of operation as a U.S. military base during 1992. It is currently in the plans that the base will officially become the property and be operated by the Greenland Homerule Government.

Homerule takes affect October 1, 1992 and we anticipate all services available to personnel transiting through Sondrestrom to remain open and accessible at the beginning of the 1992 season (March) but may change throughout the summer. Until the time of the turn over to the Homerule Government, PICO will remain a guest of the 1015th through a Host Tenant Agreement, Interservice Support Agreement (ISSA).

It is also anticipated that MAC Channel flights will continue operating in and out of Sondrestrom. However, with the transition from a U.S. military base to a Greenlandic Homerule Government it is uncertain what changes may take place prior to and immediately after the transition is complete.

Base Identification Forms

- PICO notifies the 1015th Air Base Squadron (1015th ABS) Sondrestrom of the scheduled arrival of all NSF-sponsored personnel.
- Base identification cards assign meal rates, BX privileges, and approved length of stay, and should be retained by each person while in Greenland.
- If you arrive on a weekend or after weekday working hours, your Military Travel Authorization included in your packet will allow you access to the dining hall and Arctic Hotel.
- The PICO FOM will have base identification cards for all members of each group

Weather

- To aid project planning for field work in or around Sondrestrom, it is always best to prepare for the worst. Weather in the Sondrestrom area through May can be cold, and snow is always a possibility. June, July and August are normally fairly temperate, ranging from 40-70°F (5-21°C). Rain is common in these months, and it can still be quite cool.

- Field clothing should include windbreaker, rain wear, work boots, warm hats, gloves, wool shirts, sweaters and trousers. Given the wide range of temperatures during summer months, the use of layered clothing offers the greatest flexibility for field work.
- One other important consideration in field planning for work on the Greenland coast is the 2 to 3 week insect season, usually from mid-July through early August. During this short period, large, voracious arctic mosquitoes abound. Those planning field work in July and August should include tents with mosquito nets and ample insect repellent basic gear. If plans include extensive overland travel by foot, insect head nets are suggested.

Berthing

- In past years the transient scientific personnel have used the Arctic Hotel for berthing at a cost of \$4 per night. For the 1992 season, the cost per night is to remain at \$4 per night. Due to the transition, the cost for berthing may rise, but is not expected to exceed \$25.00 per night. However, all participants should be prepared to provide their own sleeping gear and use primitive sleeping accommodations if necessary.
- The KNI also maintains a hotel in the SAS terminal on the Danish side, where the cost is approximately \$25-75 per person, depending on occupancy per room.
- Berthing accommodations in Sondrestrom are limited, particularly during the months of June-August when Sondrestrom experiences an influx of official visitors and Air Force contractors. Scientific personnel working in the Sondrestrom area are asked to complete their work as quickly as possible to alleviate overcrowding and to avoid unnecessary costs. Projects using Sondrestrom as a transit base for field work should be prepared to spend a minimum time in Sondrestrom to accomplish their objectives.
- If you enjoy Sondrestrom and wish to vacation there after a hard field season, bring your camping equipment: base loading problems prohibit extended holidays. Please notify the PICO/Sondrestrom office prior to deploying for the field if you anticipate any "after season travel."

Dining

- The Air Force operates a base dining hall on the American side. Prices are reasonable (\$3.75 for breakfast, \$5.00 for lunch and dinner).
- Alternative dining facilities covered later in this report are available for your use on both the military and civilian sides.

NOTE: Individual projects are expected to cover the costs of participants' meals from grant funds.

Communication and Correspondence

- **Mail service.** This service is slow averaging 10-14 days each way between the U.S. and Greenland. Letters and packages to Greenland participants based at Sondrestrom should be addressed as follows:

Addressee
PICO/Project Name
PSC 1502, PICO/Box 500
APO, AE 09709-0500

Letters and packages can also be sent to Greenland participants via airmail through Denmark addressed as follows:

Addressee
PICO/Project Name
c/o 1015th. Air Base Squadron
Sondrestrom AB, Greenland
3910 Sondre Stromfjord
Greenland, DENMARK

- **Telephone.** It is possible to contact the PICO/Sondrestrom Office via commercial overseas calling (+299-11153, wait for the recorded message then dial ext. 2565 or 2264 after hours).

Official project related calls can be made from Sondrestrom via the USAF DSN phone network. However, it is important to realize that there is only one DSN line out of Sondrestrom. Thus the purpose and length of calls are monitored carefully through the phone system on the base. Business calls, classified as routine official DSN calls, can be made 24 hours a day. Contact the PICO FOM for assistance in placing your calls.

It is also possible to place commercial toll calls from virtually any base, town or village in Greenland. However, the cost is high, about \$4 per minute.

- **Telefax.** The PICO/Sondrestrom Office is equipped with telefax: =299-11247.
- **E-MAIL.** The Sondrestrom Field Office accesses OMNET for electronic mail service. The mailbox address for PICO/Sondrestrom is: PICO.GLOPS.
- **Telex and Telegram.** Both services are available on the Danish side. Telex and Telefax services are available at most Danish Post Offices within Greenland. In addition, telex and radio communication from GISP2 through the Sondrestrom Field Office is possible via a packet HF system and Thrane & Thrane Standard C. Contact the Remote Camp Manager for use of this system.
- **Military Messages.** PICO has authorization to send and receive messages world-wide over the U.S. military message system. Please contact PICO for routing indicators.

Retail Stores

- The Air Force operates a base exchange on the American side. Your Sondrestrom clearance and base I.D. card define the limits of your access to exchange services and merchandise. Services include a barber shop and teller cage where you can cash both personal and travelers checks (up to \$150.00), and obtain money orders. The exchange has a limited selection of merchandise and should not be depended upon for project support needs. Bring your own personal items. Example of items available include: snack items, some canned goods, toiletries, CD's, magazines, candy, minimal clothing, postcards, soft drinks, alcoholic beverages, film etc.
- Two retail shops are on the Danish side; the KNI Butik and the souvenir shop in the SAS terminal. The Butik offers Danish food, clothing, sporting goods and housewares.

Recreational Facilities

- The base gym on the American side offers a basketball/volleyball/badminton courts, two racquetball courts, a weight room, sauna and small swimming pool. The gym also loans tennis racquets, mountain bikes and camping equipment. There is a base library, hobby shop, bowling alley, and theater where movies are shown nightly. Boating opportunities are available at Lake Ferguson, 2.5 miles south of Sondrestrom. As the Air Force facilities transfer to the Greenland Home Rule, the availability and cost of these facilities is unknown.
- Hiking and backpacking opportunities around Sondrestrom are limitless. There are numerous lakes and rivers in the area, and the Russell Glacier ice front is only 8-10 miles east of the base. The ice front is accessible both by foot and 4-wheel drive trail. The FOM requests each person or group complete a "check out/in" form before departing for personal trips including day trips.
- Alternative dining and drinking establishments:
 - The Roklub at Lake Ferguson is a Danish run club offering informal dinners at reasonable prices.
 - The Fox and Hare Officers' Club is the most formal dining facility in Sondrestrom. The food is reasonably priced. All Greenland research participants are considered on officer status, and are therefore allowed O-Club privileges. Participants may be required to purchase a temporary club membership to dine at these facilities. Generally, casual attire is acceptable at the O-Club, jeans and work shirts are not acceptable, and on certain nights coat and tie are required.
 - The Caribou Club (NCO) is for enlisted personnel and civilian members, and is available to NSF-sponsored personnel when accompanied by a club member. The cuisine is similar to the O-Club, attire is less formal and the club and bar are larger. Usually, there is at least one U.S.O. or club-sponsored musical group in town entertaining at the Caribou Club. Again, the continuing availability of these facilities is unknown.
 - Big Al's Pizza, located in the NCO Club, has take out and delivery. See the card in the hotel lobby for Al's menu and phone number.
 - In addition to the base clubs, dining is available at the SAS terminal on the Danish side.

Supplies and Services

- While in Sondrestrom, if your project requires equipment/supplies, work performed, storage or freezer space, you should make your request for these services through PICO at least 60 days in advance by completing and returning PICO the 1992 Field Requirements and Personnel Information Form.
- Should your project involve extended hiking, you should bring your own foodstuffs as PICO does not provide freeze-dried food. Fresh, frozen and canned goods can be purchased locally.
- Foodstuffs in support of field camps can be procured through the Base Commissary in Sondrestrom. Orders must be received no later than 60 days prior to arrival in Greenland. Contact PICO for details.

NOTE: PICO has established an Interservice Support Agreement (ISSA) with the U.S. Air Force which is in effect until September 30. This ISSA enables PICO to be billed for supplies and services rendered to NSF in Sondrestrom or Thule. For this reason, PICO must act as middleman for all transactions between individual projects and the Air Force and support contractors.

Requests for Technical or Manpower Assistance from Danish Scientific Groups In Greenland

- If your program requires assistance from the various scientific groups in Sondrestrom, such as maps from the Greenland Geological Survey (GGU) or weather information from the Sondrestrom Meteorological Office, your requests should be made directly to these organizations well in advance of your deployment. Contact PICO for points of contact and/or assistance.

Alcohol and Drug

- The Greenlandic Home Rule Government places a tax on alcohol, tobacco and chocolate. This means that any of the above that is to leave the Duty Free area of Sondrestrom must have a tax label. Any of the above items procured at the local BX cannot be taken from the Sondrestrom area. This includes GISP2 camp. If an individual is interested in procuring items that must receive a tax stamp, arrangements will be made to have this done. A case of beer that is taxed to leave the Duty Free area will cost an estimated \$36.00 per case. A current price list will be maintained at the PICO/Sondrestrom office.

THULE AIR BASE

Thule Air Base is operated in the same manner as Sondrestrom, with Danish and American contractors maintaining most of the support facilities. Because Thule has no established commercial air service, it is more isolated in terms of commercial, and Danish Governmental Services. Danish banking services are not available in Thule and commercial air transport is limited to GreenlandAir Charter, Bell 212 services.

Support at Thule Air Base is provided under the same provision governing the Sondrestrom Interservice Support Agreement (ISSA). The National Science Foundation does not maintain a facility or support personnel in Thule, although facilities and services such as berthing, dining, materials handling and aircraft support can be arranged through PICO. PIs anticipating work in the Thule area should contact PICO in the early stages of planning to discuss the type and extent of support required.

REMOTE FIELD SITES

Remote field projects require special attention and in-depth pre-season coordination between all interacting groups. PICO will provide administrative, logistical and operational assistance to all NSF-sponsored remote programs.

As a general rule, food, specialized camping equipment, clothing and personnel are to be provided by the individual science project. PICO can provide both camp facilities and full camp support as outlined by NSF, if requirements are identified at least 120 days in advance of deployment to the field.

Radio communication is routinely established with all remote camps in Greenland. PICO issues Southcom SC-120 and SC-0130 HF SSB Transceivers, and hand-held Terra TPX 720 and ICOM VHF aviation radios. Base station HF and hand-held land mobile radios are also available.

Resupply and retrograde assistance is supplied by PICO to remote camps from Sondrestrom. Support to other areas of Greenland will be defined according to the individual situation. Again, any anticipated support should be communicated in advance to PICO.

Dye 2

A two-man camp will again be established to maintain a skiway for training of 109th TAG flight personnel. This training program will operate LC-130 flights throughout the flight period.

PIs that may be interested in access to the Dye 2 site for observation or possible science work should either include this request in their pre-season proposal to NSF or make the interest known as soon as possible. Due to the number of flights to this location it is possible to accommodate most requests for access if the request is received well in advance and approved.

GISP2

The GISP2 camp is located at the summit of the Greenland Ice Sheet (72°35' N by 38°28' W) at an elevation of 10,500 feet with an effective pressure altitude of 12,000 to 13,000 feet. Weather conditions range from -55°C in the spring and fall to 0°C in the summer, with winds ranging up to 40 knots. Conditions at times can be unforgiving; proper clothing is a must. Due to the high altitude and lack of pollution, the U.V. is extremely intense, you must take care to protect your skin from sunburn and frostbite.

- **Structures:** The camp consists of a variety of structures which include:
 - **"Big House":** This is a 26'W x 56'L building that is perched above the snow and is the hub of the camp. It houses the cooking and dining areas, a complete bathroom, laundry facility and the main PICO office.
 - **Bath House and Generator Modules:** The bath contains 2 washbasins, a shower, 2 stools and a washer and dryer. The generator module adjacent to the bath contains two 90 kw CAT generators and the main electrical panels for the camp, plus the snow melter for water production.

- **Drill Dome:** This 50' diameter geodesic dome houses the main drilling rig for the GISP2 project. This structure is connected by a service elevator to the trench network allowing the cores to be lowered for storage and processing.
- **Core Processing Line (CPL):** This sub surface tunnel complex is the main science trench area. It is comprised of six distinct sections. The main tunnel for core transport and research is 100'L X 10'W x 23'H. The first part of this tunnel includes the elevator shaft for receiving core from the drill dome. Next is the walk-in freezer and core relaxation side trench, 30'L x 12'W x 30'H. Along the length of this tunnel are six "side labs" which have been carved into the sidewall. At the far end of tunnel is the core storage room, 60'L x 12'W x 16'H.
- **Lab Van:** A 36'L x 8'W laboratory beneath the snow surface. Chemistry is the main activity of this facility. There is a dumb waiter that connects the lab van with one of the side labs off the main trench allowing transfer of samples.
- **Science WeatherPort and Jamesway:** These contain work stations and computer terminals for various science efforts and analysis.
- **Berthing:** This area consists of five heated WeatherPorts that provide open berthing for both male and female personnel. These areas have limited but adequate room for storage, mainly under each cot. Berthing will become quite cramped during media and D.V. visits. About half the camp members choose to sleep in unheated tents which give them a bit more storage area and privacy. If you wish to bring your own tent, we insist it be a winter mountaineering tent or at a minimum of quality 4 seasons tent.
- **Flight Line:** 10,000' by 200' skiway. This is a prepared and regularly groomed landing area for ski equipped aircraft.
- **Medical Services:** A qualified medical person will be available at the GISP2 camp at all times. In addition, many of the camp staff have medical training beyond basic First Aid. Medical supplies are on hand to treat day-to-day ailments as well as emergencies. Anyone with allergies, possible special medical needs, or taking regular medication (bring required amount for duration of stay) is responsible for notifying PICO and the camp medic.
- **Communications:** There is High Frequency Radio (HF) to our main base in Sondrestrom, however, we do not have voice communications back to the United States. There is a telex satellite link capable of sending hard copies back to your university of institution. You should have the correct telex number for your department prior to coming to camp. Telex use is rather expensive (approximately \$5.00 per each 100 characters). The telexes sent by you will be billed to your university or institution at the end of the season. Business communications can be arranged and will be charged to your affiliated university of institution. The sending of personal telexes will be allowed on a limited basis, however, all telex charges will be billed to the individual's university/institution for collection.

- **Mail:** Both U.S. and Greenlandic postage is honored in Greenland for mail going anywhere in the world. U.S. postage is accepted via the Air Force Post Office; this is the most inexpensive. Greenlandic postage is accepted in the local post office on the Danish side of the base. You should purchase the stamps you will need prior to coming to Greenland.
- **GISP2 Store:** The store is a small facility with a limited supply of toothpaste, feminine hygiene products, stamps, etc. It is for emergencies and not to supply the camp with whatever may have been overlooked prior to arrival coming out. Each camp member will be responsible to bring whatever he or she feels is required for the duration of their stay and not to rely on "The Store."
- **Food Services:** Two great cooks have done an outstanding job ensuring that three meals a day, seven days a week are timely, tasty and well prepared. If you cook, we suggest you bring your favorite recipes and participate in the Sunday Brunch and/or Sunday evening meal. If you have special dietary needs (i.e., vegetarian, low sodium) notify PICO as early as possible and we will try to provide for your special need. It is advisable to bring some of your own food if you have very special requirements. It is recommended that you bring your favorite treats such as gourmet coffee, teas, chocolates, etc.
- **What Is Provided:** PICO will provide cold weather clothing and sleeping bags for PICO employees and/or guests. This includes boots, long underwear, minimum of 5 pair of socks, mittens/gloves and other outerwear. Unless you have authorization for a specific item of clothing, PICO will not reimburse for clothing purchased. We would suggest that you bring your own outer gear if you have something that is comfortable and that you have worked in previously. Exact sizes may not be available from PICO supply. Each camp member should bring whatever toiletries he or she feels they will require for the duration of their stay. In addition, we would suggest bringing comfortable clothing for non-working hours. The camp does supply hand soap and laundry detergent. Examples of items you should consider would be toothpaste, feminine supplies, film, postage stamps, postcards/envelopes, shampoo, etc. There is a Base Exchange (in Sondrestrom) but the selection can be limited as the base is in a phase-down mode.
- **Camp Water:** Water is made with a great deal of effort by melting snow. We request that only one load of wash is done per person per week with showers every 4 days. Accordingly, we would suggest that each bring ample clothing to get you through 8 days. This should include a minimum of 8 pair of socks, plus, whatever other clothing you feel you will need from one week to the next.
- **Recreation:** The flight line is also used for cross country skiing in the evenings and weekends when aircraft are not flying. There is also a 3-kilometer track that is maintained for cross country skiing. Bring your cross country skis and use them. We encourage all camp members to get out and exercise. Stunt kites have been found to be a wonderful method of relaxation and, as winds are consistent and there are no trees, flying is great. The camp has about 10 kites for those who wish to use them. We encourage you to bring your own. If you have a slide show you would like to share with the camp, there is a projector and screen on site. We normally have one or two slide shows each week. There is a volleyball court available for use when time and weather allow.

- **Drugs and Alcohol:** GISP2 will not tolerate alcohol abuse or drug abuse. Alcohol is available from the BX in Sondrestrom for consumption in Sondrestrom. If you would like to take alcohol to GISP2, the Greenlandic tax will have to be paid. An example would be: a case of beer in Sondrestrom is \$8.00, after paying the tax this same case will be about \$35.00. All alcohol from the BX going to GISP would have a similar cost increase as the beer. Drug use at GISP2 is not tolerated and anyone caught using illegal drugs will be taken to Sondrestrom on the next flight.
- **Climatizing:** As the GISP2 camp is at an altitude of over 10,000 feet and there will not be a chance to acclimatize prior to arriving; we suggest the following:
 - Do not drink alcohol for a few days prior to coming to camp.
 - Avoid fatty or greasy food and eat a great deal of carbohydrates for a few days before.
 - The night before, and especially the morning prior to coming to camp, eat as much carbohydrate loaded food as you can; potatoes and bread are good examples. Carbo-load yourself especially the morning of your flight.
 - If you have a carbohydrate-load substitute, you should drink it the evening prior and the day of your flight as well as bring it along with you to drink the first few days at camp. Carbohydrate loading has been found to be one of the best methods to curtail altitude effects the first few days.
 - Drink as much liquid as possible, starting a few days prior to flying out to GISP2.
- **Altitude sickness:** This condition and how to avoid it will be reviewed in more detail upon arrival at the GISP2 camp.

NOTE: If you need direction or would like suggestions on the type of clothing and/or equipment to bring to GISP2, please call the PICO/UAF Remote Camp Manager at (907) 474-5585 for assistance.