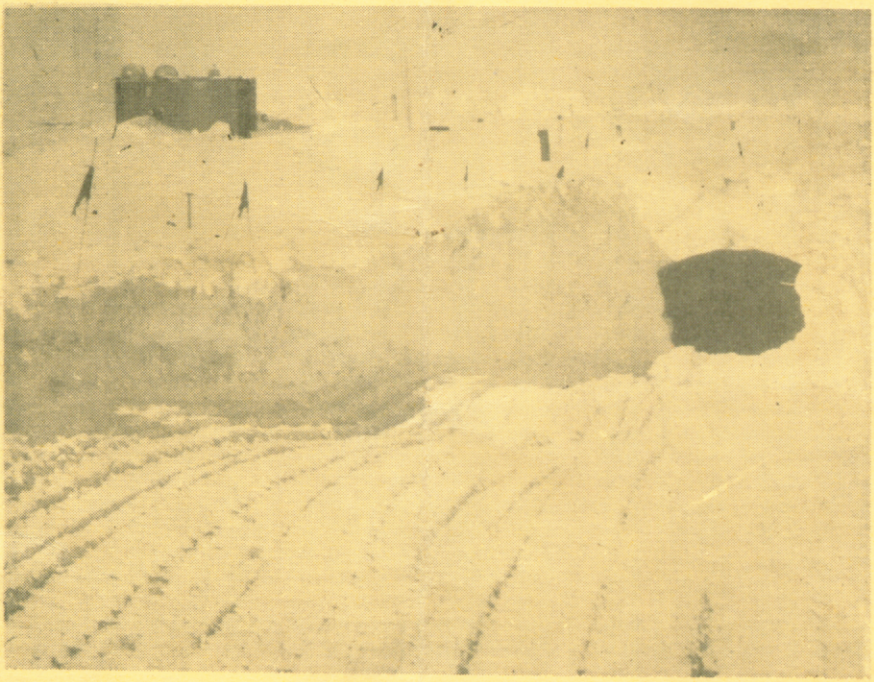
Your Stay at Byrd Station 1970-1971



National Science Foundation ● Washington, D.C. 20550

BYRD STATION ANTARCTICA

Welcome to Byrd Station, the center of inland scientific activities in Antarctica. The present station, also called New Byrd Station, was commissioned on 13 February 1961. The original Byrd Station, commissioned 1 January 1957 for the International Geophysical Year (IGY), was threatened with collapse from the weight of snow accumulated over the years. Construction of the present station began in 1960 at a site six miles from the original IGY location. Prefabricated buildings with steel wonder arches were lowered into man-made trenches and covered with snow by man and nature. This construction concept was developed and tested by U. S. Army personnel at Camp Century, Greenland. The entire camp is below the surface, except certain scientific structures and consists of a system of tunnels connecting the various facilities and quarters. The station, built in the Marie Byrd Land interior of Antarctica, and named for Rear Admiral Richard E. Byrd supports the largest inland scientific program. In addition, Byrd serves as a staging area for scientific parties in western Antarctica.

Scientific programs in Antarctica are under the auspices of the Office of Polar Programs which is administered by the National Science Foundation (NSF). If a project is approved, a grant is made to the Institution with which the researcher is affiliated.

The scientific programs at Byrd are under the supervision of the Station Scientific Leader (SSL) and his assistant (ASSL), who are representatives of NSF at Byrd Station. The SSL has his own program to look after, and his time is somewhat limited; however, the ASSL is here specifically to help you with any problems you may have. Feel free to communicate any problems you may have with cargo, work space, berthing, communications, duties, vehicle usage, recreation, safety, etc., that might require Navy support to the SSL/ASSL who will then work with the OIC to coordinate the needed effort.

Under the Secretary of the Navy, Rear Admiral D. F. Welch, Commander, U. S. Naval Support Force, Antarctica, exercises control of logistical support provided by the U. S. Navy through Task Force 43. Logistic support in the field is under the direction of Commander, Antarctic Support Activity, and his representative at Byrd where Naval Forces provide transportation, communication, berthing, messing, and maintenance of real property facilities.

LIFE AT BYRD

Living and Working Spaces

During the winter the station population is about twenty (including NSF grantees and military), with approximately eighty in the summer. Therefore living and work space is at a minimum.

When you arrive at Byrd you will be assigned a room by the ASSL, where you may keep any personal baggage. The care and cleaning of your room is the sole responsibility of you and/or your room-mate.

You may obtain through the ASSL, work space for your scientific projects either in the Science Building or one of the offices in the Met Building.

Communications

Messages: The SSL is the only NSF Representative at Byrd authorized to send any but routine data messages. Type your message(s), then leave it on the SSL's desk. He will sign it, log it and take it to Comm. A typewriter and paper are available in the SSL's office and strict message format must be followed. A copy of this format is on the SSL's desk. Incoming messages for you will be placed in a message box in the SSL's office. Do not take messages from the Communications Building without prior consent from the SSL.

Voice: If you desire voice communication with someone at another antarctic station, the SSL or ASSL will arrange a radio conference for you at Navy Radio Communications. Business matters are discouraged but may be discussed over the radio and followed by a confirming message for the record. Only qualified operators are permitted to tune and operate the transmitter, but anyone may use the equipment if an operator is present. There are only a limited number of operators, and if you desire to become an operator, check with the head radioman. (Possession of a valid ham license is not sufficient to operate the equipment, so please check with the radioman). The Ham Shack is usually in operation in the evenings, and you can use it to run phone patches to home.

Safety Precautions.

Fire and Evacuation: The OIC has posted in his office and at various places around the station, a FIRE BILL and an EVACUATION BILL. You should familiarize yourself with these to know what to do in case of disaster. Fire drills will be held periodically. Remember that everything here is quite dry, and fire is a real hazard.

Travel and Transport: Whenever you leave to work any distance from the station, be sure to tell the SSL or the ASSL where you are going and when you expect to return. Any trips more than a mile from the station must be cleared with the SSL/ASSL and the OIC. In very bad weather, WEATHER CONDITION ONE will be announced over the p.a. system, and journeys outside the station must be restricted to travelling along handlines.

There are a limited number of NSF vehicles at Byrd, and their use is generally restricted. If you desire to use a vehicle, check with the SSL/ASSL. Driving vehicles outside during bad weather is foolhardy, and a search and rescue effort is embarrassing at best.

When going outside be sure to dress adequately, even when travelling in a vehicle. Use common sense here and dress comfortably. Once you have frostbitten a cheek, finger or toe, that organ is harder to protect in the future. Your employer will have provided you with sunglasses, and these should be worn outside in bright weather. Even a slight case of sunblindness is very painful.

Medical Facilities: The Sick Bay is open to treat ailments at times posted in the USARP head. (Emergencies at any time, of course).

Cargo

Incoming cargo will be handled by the ASSL as soon as it is off-loaded from the plane. Contact him if you are expecting cargo.

Retrograde cargo must be packed and labelled in a proper manner. The ASSL will assist you in this. Lumber and banding materials are available; however, it is best to save packing material from incoming cargo. Early anticipation of large quantities to CONUS of retrograde cargo will greatly enhance the handling and scheduling, and give time to obtain necessary clearances.

Station Duties

If you are to stay at Byrd for any length of time, you will find your name appearing on two lists made up by the ASSL and posted in the USARP head and the Science Building. These are the house mouse and snow melter duty rosters.

Cleaning: House mouse work (usually done every other day), includes sweeping and swabbing the NSF head and barracks passageway, cleaning the sinks and toilets, and taking the large trashcan outside the NSF barracks down to the garbage sled. House mousing can be done at your convenience on the day assigned. Everyone is encouraged to aid the house mouse when requested, especially in hauling the trashcan. You are also encouraged at all times to leave a clean sink in the head and to empty full wastebaskets into the large trashcan.

Snowmelter: Snow melter duty is assigned to all station personnel, usually two at a time, and requires about forty-five minutes work two or three times a day on the day assigned. Snow melter shovelling is one of the exciting experiences you get only at small inland stations, so consider yourself one of a select group. The melter tank should be filled to within three inches of the top, and the various wooden doors and ports should be closed when you are finished, or else water pipes will freeze from the cold air. Despite the seven thousand feet of fresh water ice under us, water is a precious commodity at Byrd, and must be used sparingly. Everyone is allowed one laundry load and one shower per week (on the day you shovel snow, if once a week), and if you take more it is expected of you to help with the shovelling that day. Frequent showering is undesirable in this extremely dry climate, as body oils prevent chapping and help insulate against the cold. Also, because of the water shortage, the urinal in the NSF head (the toilet without a seat) should be flushed only when necessary.

Messing: During the summer the Navy does all the messcooking. As a courtesy to them, it is requested that you take your meals on time and afterwards promptly take your dishes and utensils to the sink. Helping with food breakouts and garbage hauling is also appreciated.

Recreation

Recreation at Byrd is self-made. The NSF barracks houses the general library, which is well stocked. Between the Science and the Met Buildings can be found the Club, which has a pool table and a bar (bring your own spirits.)

The Navy sells some items in the Ship's Store, including beer, liquor, tobacco, and other necessities. The sale of liquor may be rationed during the summer drought. The Ship's Store is usually open for business directly following dinner; however, the exact schedule is at the discretion of the OIC and open hours will be posted in the NSF head. You may pay cash or open a credit ledger, which must be closed before leaving Byrd and paid before leaving Antarctica.

The Science Building is generally the center for NSF activities. The Science Building contains the SSL's and ASSL's office, a lounge, darkroom facilities which may be used for amateur photography when not engaged by some scientific program, several work spaces, a good technical library, a copying machine, and a record player with assorted records.

Radio Noise (a twenty minute walk) and Stanford VLF (a ten minute walk) are two outlying facilities well worth seeing. Trips to Longwire (about twelve miles) and Old Byrd (about six miles) may be organized. These trips are very interesting and will be publicized. Be sure to dress warmly.

The natives are in general quite friendly, so feel perfectly free to ask questions. Cocktails in the Science Building at 1700.

BYRD STATION'S VITAL STATISTICS

LATITUDE:	80 01'S
LONGITUDE:	119 31'W
ELEVATION:	5095 feet (1553m) above sea level
ANNUAL MEAN TEMPERATURE:	-28.2 degrees C. -18.8 degrees F.
EXTREME LOW TEMPERATURE:	-63.2 degrees C. July 1958 -81.8 degrees F.
EXTREME HIGH TEMPERATURE:	-0.8 degrees C. January 1961 +31.0 degrees F.
PREVAILING WIND:	NNE @ 17.8 knots
MAXIMUM GUST:	76 knots June 1965
AIR DISTANCE:	885 miles to McMurdo 675 miles to South Pole

DAILY ROUTINE : DEEP FREEZE 1971

MONDAY THROUGH SATURDAY:

0630-0700	BREAKFAST
1230-1300	DINNER
1730-1800	SUPPER
1800-	SHIP STORE OPEN
1900	MOVIE

SUNDAY:

0800-1000	BREAKFAST (COOK YOUR OWN, CLEAN UP YOUR OWN MESS)
1230-1300	DINNER
1730-1800	SUPPER
1900	MOVIE

SCIENTIFIC PROGRAMS

S-21 University of Denver - Investigations of Variations in Low-Energy Cosmic Ray Cutoffs

Leader: Dr. James R. Barcus Location: Byrd Station
Dates in Field: 15 Dec - 15 Jan

Cosmic ray measurements will be made and analyzed in order to learn about the electromagnetic condition of the inner solar system and especially about near earth space which is dominated by the geomagnetic field. Two super pressure balloon flights will be made to carry sensitive detectors to altitudes between 30 and 100 kilometers in order to study radiation which is not energetic enough to penetrate to sea level, even at high geomagnetic latitude. Measurements will be made at Fort Churchill, Manitoba and College, Alaska and at Byrd Station, Antarctica.

This combination geomagnetic location provides for a comprehensive picture, the balloons making it possible to investigate unpredictable events.

S-22 University of Washington - Radioscience Research at Byrd Longwire Substation

Leader: Dr. Irene C. Peden Location: Byrd Longwire
Dates in Field: 1 Nov - 1 Dec

Dr. Peden and a male assistant will investigate the morphology and evolution of the D-region ionosphere and the dielectric properties of Antarctic ice will proceed in the following manner: (1) multiple frequency VLF transmissions will be made from Longwire to Scott Base (part of the time across the day-night boundary) in order to better understand the D-region and abrupt ionospheric discontinualities. This signal is primarily in the TE (transverse electric) mode; TM (transverse magnetic) mode transmissions between Longwire and Siple may be attempted. (2) At least three multiple remote receivers, and hopefully a fourth which would provide over-determination and thus improve accuracy, will be operated to investigate ion density changes and travelling waves in the polar mesosphere (50-80 km). From these studies may come information about the generation of acoustic and gravity waves.

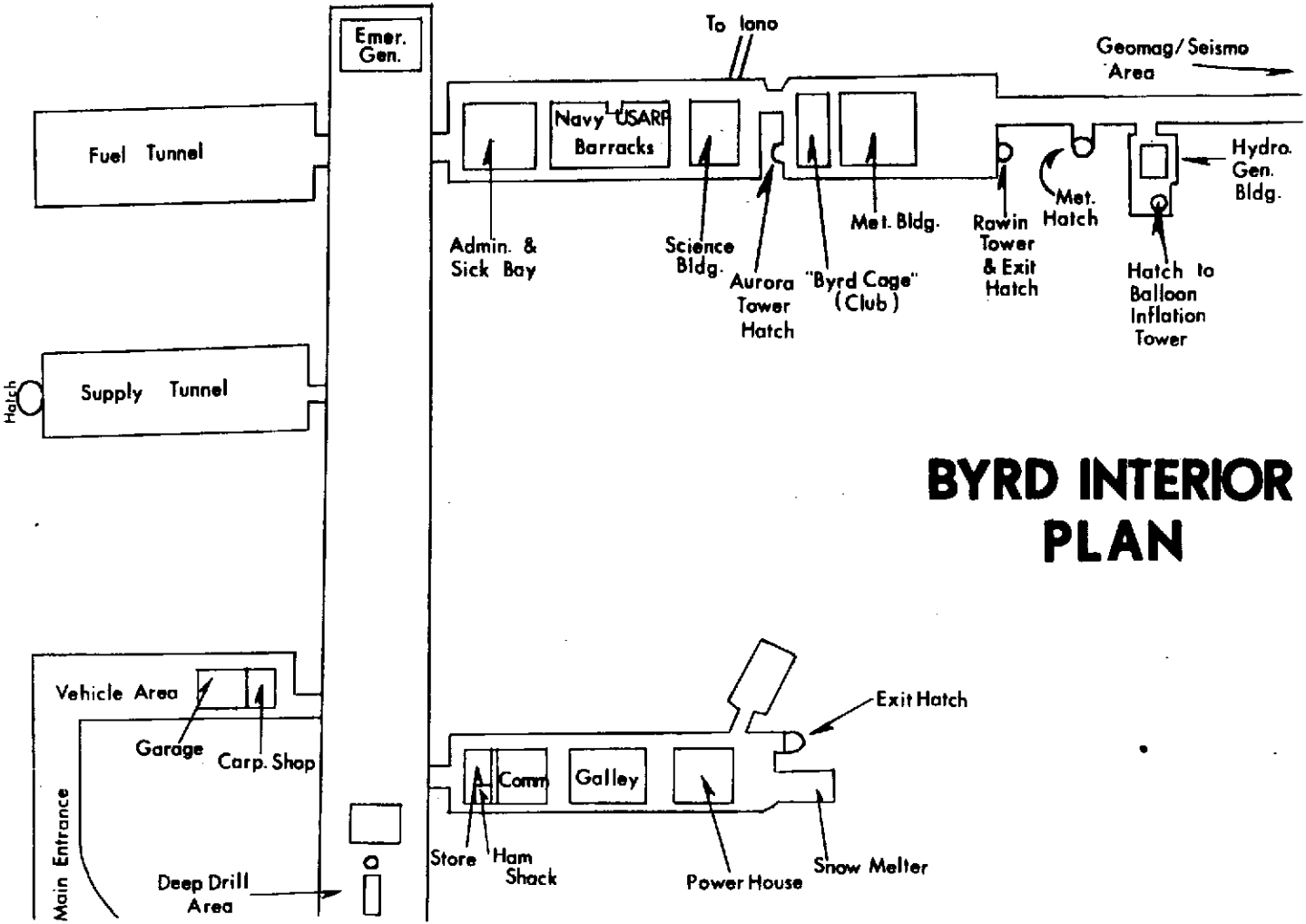
S-34 University of Wisconsin - Seismic Investigations at Byrd Station

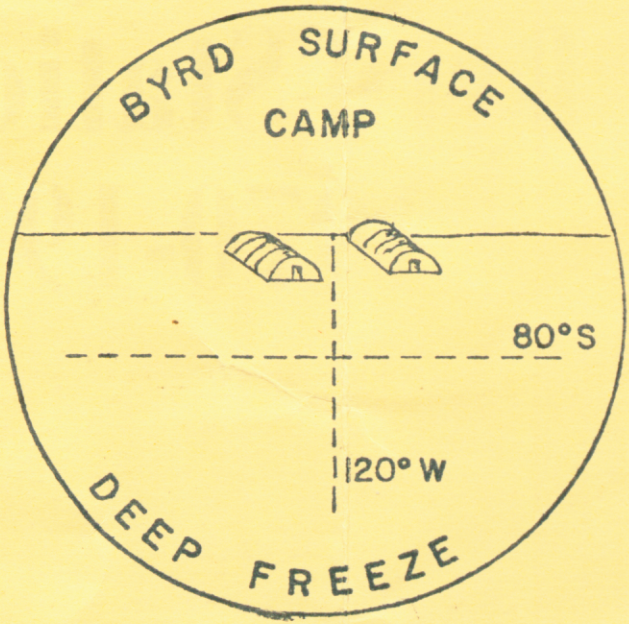
Leader: Dr. Heinz Kohnen Location: Byrd Station
Dates in Field: 20 Nov - 25 Jan

Previous seismic measurements in Antarctica and Greenland have revealed effects on seismic wave velocities that are caused by crystal anisotrophy in ice and the different modes of densification at different depths. Rough estimates of energy attenuation in ice have also been made. This project will study these phenomenon in more details near Byrd Station where there already exist good depth-density profiles.

KEY USARP PERSONNEL

USARP REPRESENTATIVE ANTARCTICA (MCMURDO)	D. Chris Shepherd	PROGRAM AND OPERATIONS, PLANNING WITH NAVY, CONTACT WITH FIELD PARTIES AND INLAND STATIONS
HOLMES & NARVER REPRESENTATIVE (MCMURDO)	Robert Buettner or Emmett Herbst	ASST USARP REPRESENTATIVE, FLIGHT SCHEDULING, MANAGEMENT OF HOLMES & NARVER SUPPORT STAFF SERVICES, VEHICLE USAGE
STATION SCIENTIFIC LEADER (BYRD STATION)	John P. Billey	OVERALL MANAGEMENT OF USARPS AND USARP MESSAGES
HOLMES & NARVER REPRESENTATIVE (ASSL, BYRD STATION)	Pat R. Haggerty	SUPERVISION OF INCOMING AND RETROGRADE CARGO, MANAGEMENT OF VISITORS, USARP ARRIVALS, AND DEPARTURES


Emer. Gen.
To Iono
Geomag/Seismo Area
Fuel Tunnel
Navy USARP Barracks
Hydro. Gen. Bldg.
Admin. & Sick Bay
Science Bldg.
Aurora Tower Hatch
"Byrd Cage" (Club)
Met. Bldg.
Rawin Tower & Exit Hatch
Met. Hatch
Hatch to Balloon Inflation Tower
Hatch
Supply Tunnel
BYRD INTERIOR PLAN
Vehicle Area
Garage
Carp. Shop
Exit Hatch
Comm
Galley
Main Entrance
Deep Drill Area
Store
Ham Shack
Power House
Snow Melter


BYRD SURFACE
CAMP
80°S
120° W
DEEP FREEZE