

During 3 German North Victoria Land Expeditions (GANOVEX), Lillie-Marleen-Hut served as base, radiocenter and depot. From here, the logistic and scientific field works were coordinated. Helicopters were supervised in all operational phases by several radionavigation systems.

During GANOVEX II, the hut with its food reserve served as emergency shelter for the shipwrecked members of the unlucky Gotland II which sank off the coast of Victorialand. GANOVEX III left limited quantities of food, kerosine and gasoline behind to serve in case of further emergencies.

Gondwana Station

(West of Campbell Glacier Tongue, Gerlache Inlet, Terra Nova Bay, at the foot of Mt. Melbourne, at 74°38'S, 164°13'E)

The Gondwana-Station is the youngest of all German stations and was established during GANOVEX III, in January 1983. It consists of 4 huts lying on a snow-free tongue of land right at the Ross Sea coast. The station can be reached by ship and plane. Runways can be arranged either on the sea ice in front of the station, or at the Browning Pass nearby. Besides a hut similar to Lillie-Marleen-Hut and serving the same purposes (accommodation, radio operating), there exist 3 further buildings each 7 squaremeters large and made of zinc protected steel plates, for the following purposes:

- food storage for 24 men-months
 - equipment including tents, gas bottles
 - power station with three generators (10 KVA), snow melting facilities and workshop.
- All huts are built in the same way: they are based on a steel frame and anchored by steel cables.

The station will first be used in 1984/85 during an aero-geophysical survey of the Federal Institute for Geosciences and Resources (BGR, Hannover).



Gondwana Station

phot. Kotthe

Antarctic Stations – chronologically

January 1980

** Inauguration of Lillie-Marleen-Hut, first summer station of the Federal Republic of Germany in the Antarctic (in North Victoria Land, at 71°12'S and 164°31'E).

February 1981

* Inauguration of the fulltime occupied Georg-von-Neumayer-Station in Atka Bay (at 70°37'S and 08°22'W).

January 1982

* Inauguration of Filchner Summer Station on the Filchner/Ronne Ice Shelf (at 77°09'S and 50°38'W).

January 1983

** Inauguration of a further summer station called Gondwana, at the foot of Mt. Melbourne (at 74°38'S and 164°13'E).⁰⁰

* by AWI
** by BGR

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Georg v. Neumayer
Filchner
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Gondwana



Antarctic Stations
of the
Federal Republic of Germany

1983

Georg-von-Neumayer-Station

(Atka Bay, NE Weddell Sea, 70°37'S, 08°22'W)

When the Federal Republic of Germany joined SCAR (1978) and the Antarctic Treaty (1979), it decided to build a polar institute, a polar research and supply vessel, and a permanent wintering-over station in Antarctica.

Therefore, in the antarctic winter of 1979/80, MS Polarsirkel was sent to Antarctica to find a suitable place for the station in the Weddell Sea region. There were two alternatives: either to set up the station on the Filchner-Ronne Ice Shelf in the southern Weddell Sea, or to enter Atka Bay much further north and easier to accede (but still 2640 miles away from the nearest harbour, Cape Town). Atka Bay was chosen. In 1980/81, a fleet of three ships consisting of MS Polarsirkel, MS Gotland II and TB Titan carried construction material to Atka iceport. On 24 February 1981, the station was inaugurated at position 70°37'S and 08°22'W.

The station is built on the ice shelf, 200 meters thick, floating on another 200 meters of water. The bottom relief underneath is hilly. However, the surrounding of the station is totally flat. The ice edge which is 6.5 kilometers away, is about 10 meters high and offers inlets in which supply ships can anchor and discharge. The station consists of the main building, the "tubes", and several shelters for supply goods, fuel, engines, vehicles, and for the meteorological and geophysical observatories. The main building is a two-tube steel construction, each 50 meters long and with a diameter of approx. 7.5 meters. The steel reacts elastically to the high pressure, once the station is fully submerged in the surrounding ice. At present, the station is covered with approx. 2 meters of snow, so that hardly anything is visible at the surface. The most obvious land mark is a meteorological mast, 45 meters high. The tubes contain living quarters, a hospital, laboratories, a workshop, a radio station, and an electric power plant with snow melter. All this is installed in prefabricated containers which were set up in the steel tubes.

At the time, when the station has to be evacuated because of the increasing pressure due to the submergence of the tubes into the ice, an access will be cut into the ice and the containers will be recuperated so that only the tubes will get lost. In the present antarctic winter of 1982/83, eight people stay at Georg-von-Neumayer-Station. This team consists of a medical doctor, who is the station leader, 2 meteorologists, 2 geophysicists, 1 engineer, 1 radio-operator and 1 cook. They will return to Europe after 15 months in Antarctica, in April 1984.

The Geophysical and Meteorological Observatories

Two observatories exist at Georg-von-Neumayer-Station, a geophysical and a meteorological one. The Geophysical Observatory measures seismics, magnetics, gravimetry and earth tides. As some of the sensors are better

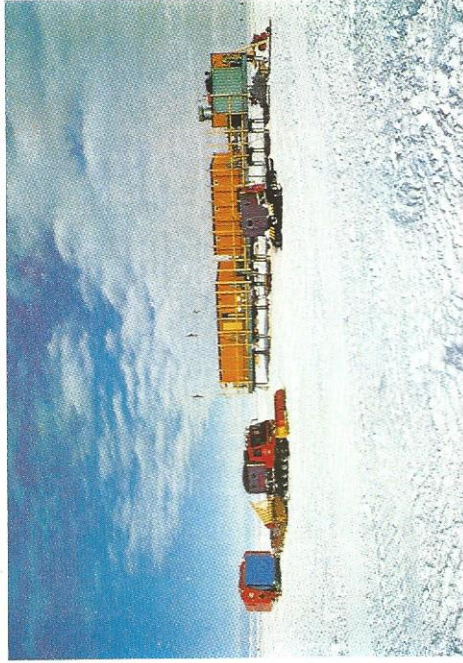
placed on firm ground than on ice, it is actually planned to put them on nunataks nearby (isolated rocks piercing through the ice shield) or even on the sea bottom, in lowering them through boreholes.

The meteorological observatory runs a complete weather station including upper air soundings. It is planned to collect also trace gases and study atmospheric internal waves. The weather station takes continuous records of the common surface parameters, such as air pressure, wind velocity, air and snow temperature, precipitation, up- and downward radiation fluxes and air humidity. Furthermore, a radiosonde with OMEGA-wind finding is launched once a day for an upper air survey. The radiosonde data and the three-hourly routine observations are broadcasted in the Antarctic; they are also transmitted to Germany via satellite and then transferred to the Global Telecommunication System (GTS). Besides the observatory work, special scientific programmes are carried out at Georg-von-Neumayer-Station during summer campaigns. These include glaciological, geodetic, trace material and atmospheric boundary layer studies.

Filchner Summer Station

(on Filchner-Ronne Ice Shelf, Southern Weddell Sea, at 77°09'S, 50°38'W)

When the Federal Republic of Germany had decided to set up a permanent polar station in Antarctica, it had the choice of two alternative places: Filchner and Atka Bay, one 1450 kilometers away from the other. When the decision was taken in favour of Atka Bay, the alternate place was not abandoned but prepared for receiving a summer station which will serve as headquarters for summer campaigns. The station was inaugurated in January 1982, at 77°09'S and 50°38'W, it is not permanently occupied. It

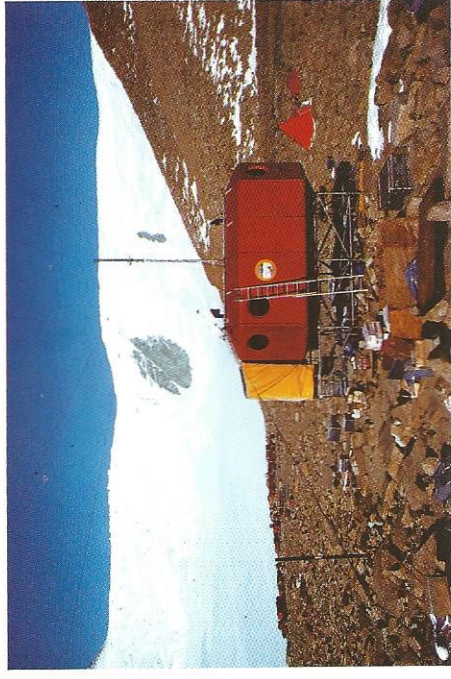


Filchner Summer Station

phot. Drücker

was last time visited by RV Polarstern during its 1982/83 cruise. Different from Georg-von-Neumayer-Station, this station is not built into the ice, but on top of it. The containers with living compartments, a snow melting plant and a power station are set on a platform put on 14 pillars, 1.5 meters above ice level. In case of snow drift, the platform can be lifted. The station is equipped for emergencies. It has 12 berths, food for several months, and a large reserve of fuel.

In 1983/84, Filchner Station will serve as base for the "Filchner-Ice Shelf-Project". In this project, RV Polarstern as well as two new aircrafts will take part. Fields of study will be geodesy, geophysics, glaciology, photogrammetry and meteorology. About 20 scientists will participate. It is planned to map the ice shelf and to study the ice dynamics.



Lillie-Marleen-Hut

phot. Tessensohn

Lillie-Marleen-Hütte (Lillie-Marleen-Hut)

(Near Mt. Dockery, Everett Range, North Victoria Land, at 71°12'S and 164°31'E)

Lillie-Marleen-Hut was established in 1980, at the eastern side of the Lillie Glacier in a well protected mountainous depression open to the Northeast, at the foot of Mount Dockery, Everett Range. The distance from the sea is 75 kilometers. The hut can only be reached by helicopter.

Lillie-Marleen-Hut consists of pre-fabricated fiberglass-strengthened elements which prevent loss of heat by polymethanic foam. The hut is built on a steel frame which does not allow drifting snow to bury it; steel cables anchored in rocks make the hut resistant even against heavy storms. On 22 squaremeters, Lillie-Marleen-Hut offers a maximum of 10 berths, a kitchenette and space for the radio operator.