



Twenty years of O'Higgins Antarctic Station – working on the White Continent

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The DLR Antarctic station was established in 1991 – a team is on site 365 days of the year

Outside the door, penguins breed and use the large satellite antenna and its base as a windbreak. Inside the O'Higgins German Antarctic Receiving Station (GARS), German Aerospace Center (Deutsches Zentrum für Luft- und Raumfahrt; DLR) personnel control the reception of satellite data. Established in 1991, the station has been defying the icy storms on the White Continent for the last 20 years. The station is staffed around the clock – including Christmas and New Year.

Storage space on a satellite – or rather the lack of it – 20 years ago is the reason that, even today, engineers from DLR travel from their home base in Oberpfaffenhofen to work in the Antarctic. The European ERS-1 Earth observation satellite did not have sufficient capacity to store the recorded radar data on board, so the O'Higgins GARS was brought into operation on the rocky Schmidt Peninsula at the northern tip of the Antarctic Peninsula. In September 1991, the station received its first Antarctic data from ERS-1, which had been launched a short time previously. "At that time, the Antarctic was still largely an unknown continent," the current station manager, Robert Metzger, says.

Shift work in the Antarctic

Klaus Reiniger, one of the people who established the station, installed an antenna at the inhospitable location, which had to be able to withstand violent storms. The personnel live in linked containers with bedrooms, a kitchen and a bathroom. Gusts hit the station and its antenna at 180 kilometres per hour. During violent storms, the wind speed can reach 250 kilometres per hour. Today, 20 years on, the DLR station's primary task is receiving the data sent to Earth by the TerraSAR-X and TanDEM-X radar satellites. Alongside the reception of Earth observation data, the station is also used to measure the tectonic movement of the Antarctic Peninsula. DLR's collaboration partner for this is the Federal Agency for Cartography and Geodesy (Bundesamt für Kartographie und Geodäsie; BKG), which is responsible for these measurements. The Chilean Antarctic Institute (Instituto Antártico Chileno; INACH) also supports DLR. This 'branch' of DLR's German Remote Sensing Data Center (DFD) is staffed 24 hours a day, 365 days per year. Alongside Station Director Erhard Diedrich and Logistics Manager Marcelo Morais, the O'Higgins team includes nine engineers who take turns with their deployments in the Antarctic.

Currently, station manager Robert Metzger and his colleague Ulf Lindh are on site to monitor the operation of the nine-metre antenna, send instructions from the control centre in Oberpfaffenhofen to the satellite or forward information to the control centre once it has been received from the satellite. When the two engineers step outside the door of their workplace, they have a view which most people never have the opportunity to see – icebergs, penguins and a snowy and icy landscape that has a fascination all of its own. The journey to the station can sometimes be a challenge, depending on the weather. The crew are taken from Punta Arenas in Chile to King George Island by the Chilean or Brazilian air force. From there, on this occasion, the two men changed to a ship that then took them to the station. They will spend the weeks over Christmas and New Year in the Antarctic – remote from family and friends.

Feasting and cake for Christmas

“Anyone who does not have a passion for this world should not be sent to the Antarctic as a team member,” Robert Metzиг emphasises. Books, DVDs and music fill the leisure hours; contact with home is possible by telephone and internet. For Christmas, the two DLR engineers, who keep the station operational with two Chilean staff, have promised themselves at least a small feast: “We will cook something delicious and we have also been invited to visit by our colleagues at the nearby Chilean General Bernado O'Higgins Station,” Metzиг says. German Christmas cake and cookies accompanied the two men to the Schmidt Peninsula. However, the Antarctic workers will have to do without a Christmas tree: “Plants are not allowed to be brought here.” And a small plastic tree was not a proper alternative for Christmas.

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Data reception in the Antarctic



The O'Higgins German Antarctic Receiving Station (GARS) was established in 1991. Since then, the nine-metre antenna has been receiving satellite data – even in extremely stormy conditions.

Credit: DLR (CC-BY 3.0).

Working with a view of icebergs



The white buildings and the nine-metre antenna of the O'Higgins DLR Antarctic station lie close to the Chilean Antarctic station (painted red).

Credit: DLR (CC-BY 3.0).

The O'Higgins Antarctic station team



DLR Station Manager Robert Metzger (right) and Ulf Lindh (second from left) at the O'Higgins GARS Antarctic station in December 2011. They are supported by two Chilean staff members who maintain the infrastructure of the station.

Credit: DLR (CC-BY 3.0).

Antarctic workplace



On the monitors, the DLR team at the O'Higgins GARS Antarctic station control the reception of satellite data. Teams take turns at the station throughout the year.

Credit: DLR (CC-BY 3.0).

Neighbours on the White Continent



The DLR O'Higgins GARS Antarctic station lies close to the Chilean General Bernado O'Higgins Station. The red building is part of the Chilean station; the DLR antenna in the background receives the satellite data. The teams at the two stations visit one another.

Credit: DLR (CC-BY 3.0).

Penguins as guests



Penguins live and breed around the DLR O'Higgins GARS Antarctic station. When storms are raging, the birds seek refuge at the base of the nine-metre antenna. In summer they breed close to the station.

Credit: DLR (CC-BY 3.0).

Antarctic Schmidt Peninsula



Walks around the DLR O'Higgins GARS Antarctic station are not really feasible. The view of Mount Jacquinot compensates for the isolated location.

Credit: DLR (CC-BY 3.0).

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