Aconcagua 2009
Meteorological assistance to get to the summit

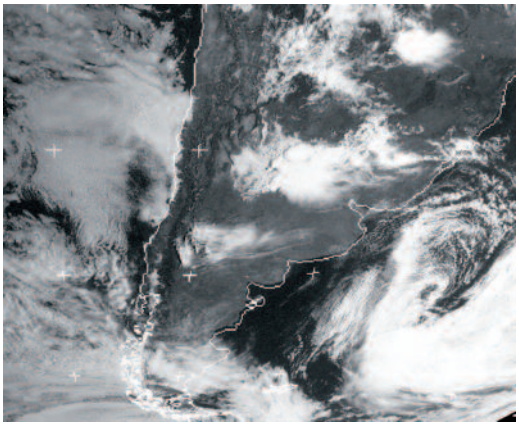
At the end of the Year 2008 a group of alpinists asked me to assist them with meteorological information for the ascent of Aconcagua. At 6,962 meters (22,841 ft), Cerro Aconcagua is the highest mountain in the Americas and the highest mountain outside Asia. It is located in the Andes mountain range, in the Argentine province of Mendoza. The climbing period is between late November and late February. Aconcagua generates its own weather. There is a wide range of temperatures, from warm days to freezing nights. Snow and winds (some strong) are usual on Aconcagua, and storms may occur at any time of the year. The low humidity and strong winds are the most prominent characteristics of the weather of this mountain. At the summit the temperature may drop to -30°C with frequent strong winds, which gives a windchill of about -55°C.
Mount Aconcagua is some 160 km from the Pacific Ocean (which can be seen from the summit during sunny days). Storms and "bad" weather are mainly due to the moist winds originating in the Pacific Anticyclone. The winds go South and rise to the West and then against the mountain range, cooling down such that the humidity gives snow on the high peaks of the Andes.

The ascension was scheduled between the February 01st and 08th with two spare days until the 10th. Each year, about 4000 people try to climb Aconcagua. The ascent is technically not extremely difficult. That's why it can attract people who are inadequately prepared, mentally and physically, for high altitudes. During the 2008/09 season, there were five times more casualties than in the years before. The wind was extremely fierce and never stopped roaring. The periods of stable weather situations only lasted one or two days, which is not enough for a safe ascent. Very few people made it to the summit. In January, 4 Italians with an Argentine guide got caught in a blizzard near the summit. During the descent they became lost and disoriented in extremely low visibility and were suffering from low temperatures. Only three of them survived the disaster and were brought down safety. One Italian climber and the Argentine guide died trapped in the storm and could not be rescued.

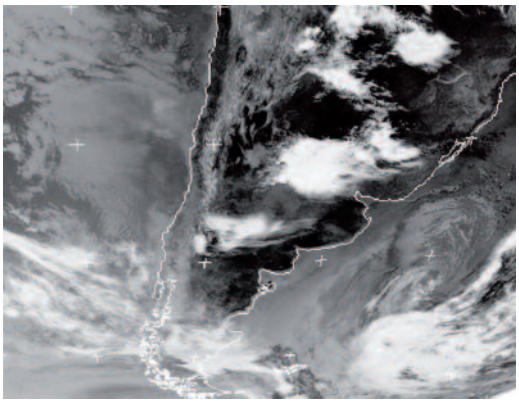
Two days at "Confluencia" valley in order to start the acclimatisation, admiring the 2700m high South Face which is to be climbed by experts only.

Weather Analysis for 1st February 2009

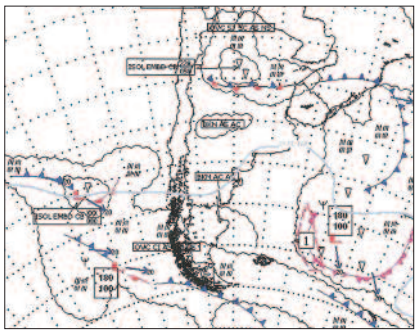
High pressure over the Pacific along the Chilean coast, low pressure west of Cape Horn and another low pressure east of Argentina. Some instability with associated cold front and thunderstorms situated north-east of the Aconcagua area. The 12 hr forecast corresponds well to the GOES-East satellite imagery.

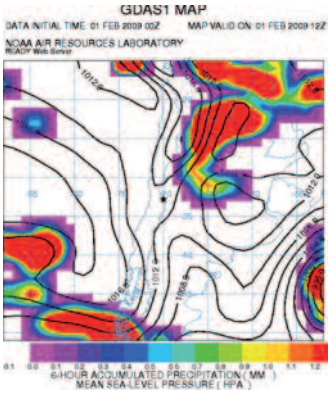


Goes East VIS + IR 01.02.2009 1200 utc.

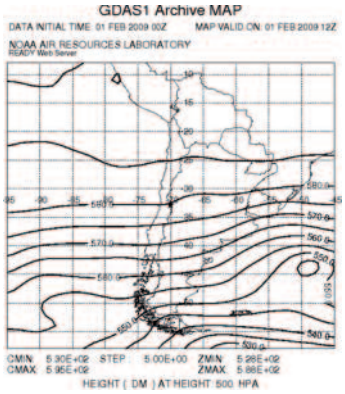


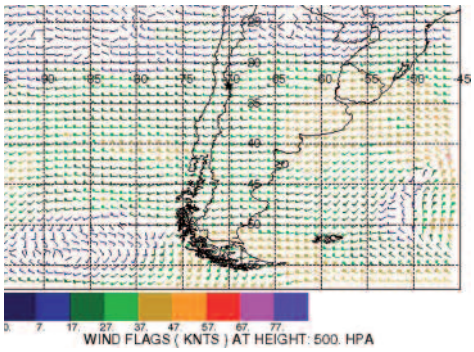
Forecast 12hrs to 10.02.2009





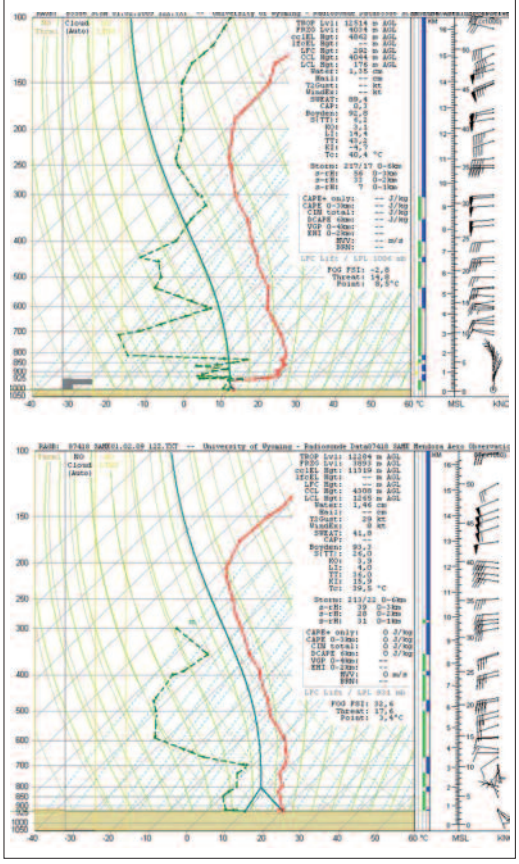
Weather analysis for 01.02.2009
6-8 days bfore the summit day



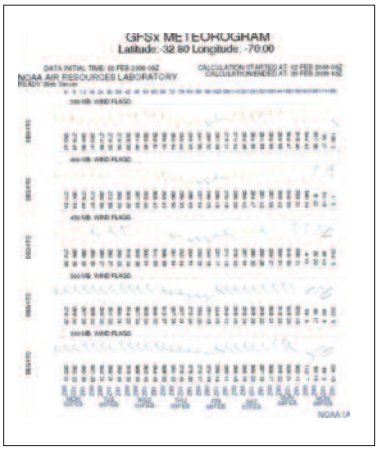


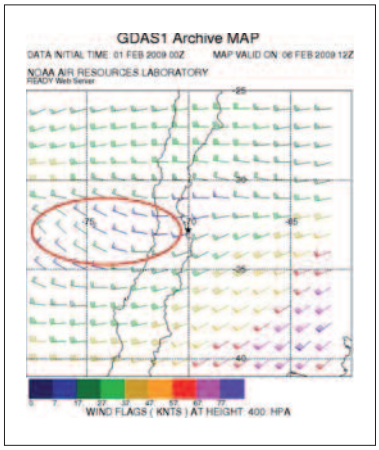
The measured wind speed and direction at different altitudes is in good agreement with the forecast winds.

Upper air sounding
from Sto. Domingo & Mendoza 12utc.



Meanwhile acclimatisation continues around “Plaza de Mulas” which is a real city of tents. Many companies provide services such as guides, tent rentals, stoves, dining and restrooms, hot-water showers and internet connections. There is, in addition, a coordinated service which includes specialized medical care, a rescue patrol and park rangers.



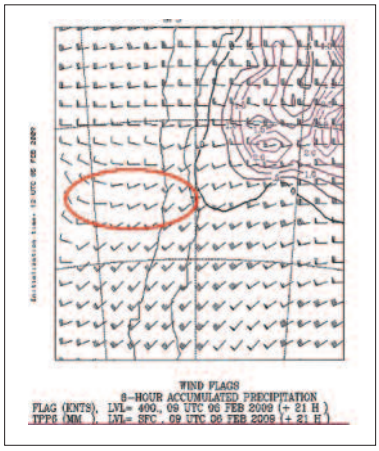


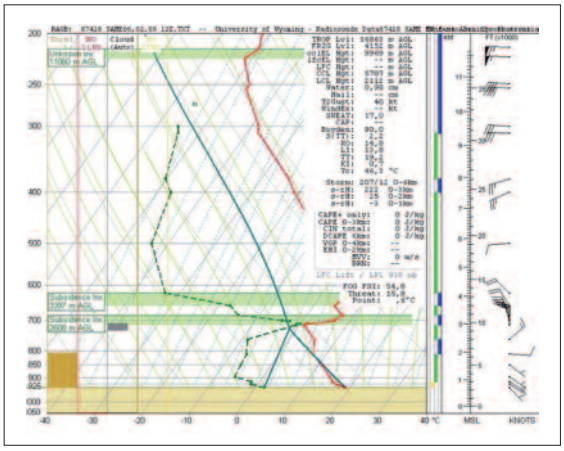
Forecast for a possible summit day

Before an attempt on the summit it is necessary to have weather conditions that permit safe walking on the top, with winds less than 15 kts and gusts of no more than 30 kts. It is also vital to have finished the acclimatisation. A GFS 180hrs forecast meteogram indicated the 6th February would be the only day with weather conditions permitting access to the top. No precipitation was expected until the 9th February. On the 6th, the sky would be practically clear and the winds in the morning at the altitude of about 7000 m was forecast at 35 kts with gusts of 40 kts, diminishing to 15 kts during the day. The only possible summit day was the 6th .The problem at that moment was that acclimatisation for getting safely to 7000 m would only be complete for the 7th.

The webcam situated at 4900m at Plaza de Mulas permitted a rather good view of the evolution of cloudiness.

The main meteorological problem was to follow the formation of the area of low winds, and to communicate the information to the group by sat phone because the only internet access in the area is at Plaza de Mulas. During the following days the forecast was really consistent.





The area of low winds and dry weather continued to be forecast for the 6th. The measured winds by the Mendoza upper air sounding of that day confirmed the wind forecast.

For “Camp Cholera” at 5800m well protected againstthe westerly winds the ascension was without any major-problem. In spite of that the acclimatisation for thesummit was not achieved for the 6th, the risk was takento skip a day and to schedule the ascension to thesummit for that day, due to the general weatherconditions. During the 6th in the morning after a stormynight the area of lower wind speed reached theAconcagua. As the winds were rather strong in the nightthe physical recuperation at 6400m was impossible. Thestormy night plus the incomplete acclimatisation madethe alpinists aborting the attempt to the summit.

View over the Andes from Aconcagua at 6300m.

Upcoming altitude sickness made it impossible to climb up the remaining 500 m to the top. The weather conditions were good this day for descending from 6300 m. Another alpinistgroup with some altitude sick people and had to be rescued the same day, which at thisaltitude is not easy.

Conclusion

The 7 days forecast of the GFS was quiteexcellent the wind speed compared with themeasured winds of the upper air soundingsof Sto. Domingo and Mendoza had beenbetween 15 and 20kts during the day, very close to the forecast data. The wind speed and the direction were accurate during the whole week. Unfortunately the summit was not reached because of acclimatisation problems. Following the forecasts, the wind was strengthening the day after and from the 8th until the 10th strong winds and moderate snow made a second attempt for the year 2009 impossible.

Thanks to Nathalie Mathgen for the Aconcagua photos and all the climbing information.

Claude **Sales**

Service météorologique de Luxembourg