40 000 ft without oxygen!

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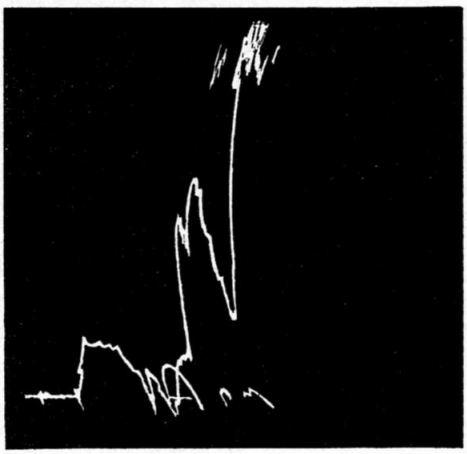
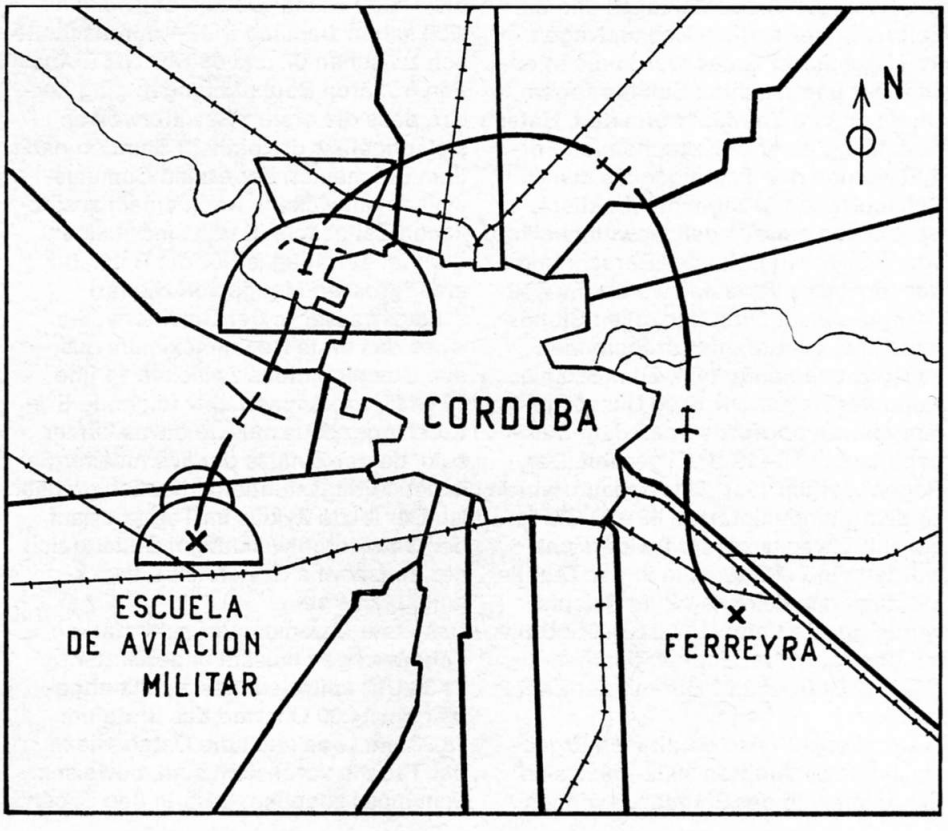
On February 28th, 1966, Abel Síntora, Lieutenant of the Argentine Air Force and active glider pilot, made one of the most astonishing flights of the Argentine – and, perhaps, of the world's-gliding activity: he climbed into a cumulonimbus cloud more than 40 000 ft (12 000 m) in height without oxygen equipment and returned alive!
On this day, over the city of Córdoba – the flight location – the development of cumulus clouds began early in the morning, indicating a high probability of a day with favorable soaring conditions. At 14.30 HOA (Argentine Official Time) Síntora observed about 5/8 of Cu congestus and a Cb with intense showers about 15 km (9 miles) south of the Escuela de Aviación Militar (Air Force Pilot Training School); therefore he decided to obtain the 3000 m gain for the «Gold C» altitude requirement with a Blanik L-13.
Taking-off for the first time at 16.00 HOA he had to land after twenty minutes due to lack of suitable updrafts. He could still observe the rain that came from the south. A cumulus congestus was drifting towards the runway about 8 km (5 miles) north of the aerodrome.
Síntora made a new start: at 16.30 HOA he was towed again in an attempt to reach this cloud. The cumulus was moving rapidly and he made a quick interception, releasing at 16.35 HOA. He found smooth updrafts of 3 m/s (about 600 ft/min). Inside the cloud the vertical velocities grew up to 10–15 m/s (2000–3000 ft/min), without turbulence up to the 3000 m (10 000 ft) level where hail and icing set in over the cockpit and wings.
At 4500 m (15 000 ft) Síntora left the cloud for he had reached the proposed aim and had no oxygen equipment. Flying towards north-west he found a downdraft of 10 m/s, surrounded by towering cumulus. Preparing to land he flew at 2000 m (about 7000 ft), 15 km (9 miles) east of the aerodrome, with strong north winds, and a cloud base of 1500 m (5000 ft).
On starting to glide towards the airport, going through a cloud, he suddenly felt a strong updraft: the variometer marked maximum climb, 30–35 m/s (5900–6900 ft/min). Despite his efforts to maintain a fixed compass bearing, the turbulence put the glider into a turn. He tried to make a spin but was unable to do so. The variometer still marked maximum, and the Blanik still ascended. At 6500 m (22 000 ft) Síntora observed, semi-conscious, the formation of ice over the cockpit and wings. He quickly lost consciousness. On awakening he found himself in a fast left-handed dive



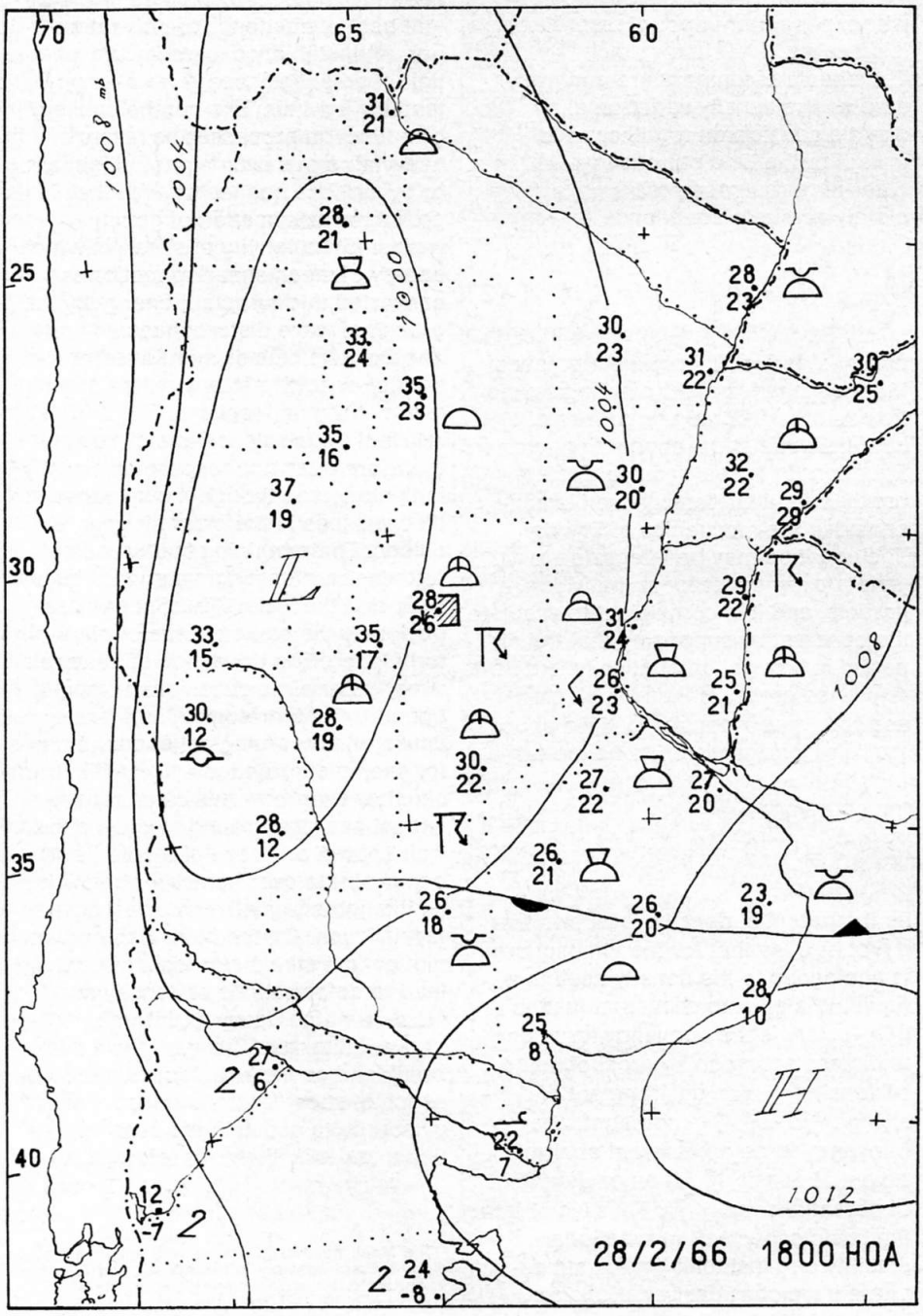
Barogram of the flight.

Plan view of the City of Córdoba, showing the flight path.



turn, at low height. He lost consciousness again, and woke up later inside the crashed glider which had miraculously hit the ground at a small angle. The Blanik had lost 3.5 m (12 ft) of each wing and was without ailerons!
Síntora was assisted by some neighbours – near Estación Ferreyra –; fortunately he had suffered only a wounded right cheek and a hurt ankle.
This flight was recognised by the FAVAV (Argentine Gliding Federation) as an Argentine record both of gained height: 11 200 m (37 300 ft) and of absolute height: 12 500 m (41 600 ft).
The barogram (fig. 1) shows the trace – almost vertical – of the violent climb; probably more than 40 m/s (7800 ft/min). There is no registration of the descent, since the recording pin became locked at the top of the cylinder: oscillations can be seen there, surely due to the severe turbulence.
Fig. 2 shows a schematic view of the flight trajectory over the city of Córdoba.
Curiously, an airline – and soaring – pilot was flying in this area at the time and estimates the height of the huge cumulonimbus that sucked Síntora's glider in at about 15 000 m (50 000 ft).
The synoptic situation in the morning, 09.00 HOA (12.00 GMT), indicated a quasi-stationary front in the center of the country, preceded by a squall line situated at the time over Buenos Aires and the River Plate. Behind the front a relatively dry and cool air mass was approaching, with low dew points and scarce cloudiness over the Province of La Pampa, south of the Province of Buenos Aires; there were clear skies over northern Patagonia.
The warm mass that covered all the center and north of the country, was extremely moist and unstable, with notably high dew points, and presented at this early hour strong convective activity. At Córdoba the first cumulus congestus appeared.
As a result of the daytime warming – February is mid-summer in the Southern Hemisphere – the convective activity had extended and the typical thermal low of the Argentine northwest had intensified. The figure shows thunderstorms and cumulonimbus practically all over the middle and northeast of the country. The dashed square marks the area where Lt. Síntora was sucked in by one of these convective formations.
References of the flight were obtained from: Ten. A. Síntora, «Absorbido por un cúmulo y sin oxígeno pasé los 12 000 metros», Revista Nacional Aeronáutica y Espacial, No 292, Septiembre 1966, as well as directly from Mr. Alberto Rodríguez Ponce, Chief Gliding Instructor at the Air Force Pilot Training School.

Synoptic situation and significative weather shortly after the end of the flight. Numbers indicate temperature and dew point (in ° C).



Zusammenfassung:
Ein unfreiwilliger Flug von Abel Síntora, Leutnant der argentinischen Luftwaffe, auf über 12 km Höhe ohne Sauerstoff wird beschrieben. Seine Blanik wurde vor der beabsichtigten Landung mit 30–35 m/s in einen Cumulonimbus hineingesogen, dessen Höhe von Luftverkehrspiloten auf 15 km geschätzt wurde. Das Segelflugzeug landete mit nur leichter Beschädigung, mit dem bewusstlosen Piloten an Bord, der nur leichte Verletzungen am Fuss und im Gesicht davontrug. Dreieinhalb Meter Flügel und die Querruder fehlten an der Blanik. Der Flug wurde als argentinischer Rekord anerkannt. Die Abbildungen zeigen die Flugbahn, das Barogramm und die Wetterlage, die durch verbreitete Wärmegewitter in einer feuchten Luftmasse gekennzeichnet ist. -Kuettner-