

HINTS FROM THE R&D TEAM

R&D

All our products are regularly tested according to the directives of the certification standards. It is a common fact that pilots are not always able to use the reserve systems or other products under the same conditions as set by the norm. So we make sure that even our tested products undergo situations that simulate the real piloting experience as much as possible. SKY LITE was therefore tested with a weight excess of 120 kg to find out how the reserve tends to behave in this situation. The aim was to observe the sink rate and stability of the reserve since these two factors are generally considered the most decisive when using reserve systems.

We found out that the stability is affected by outside factors, especially:

- Airmass.
- Wind Speed.

Also by factors that can be prevented:

- Interaction of the glider's canopy and the reserve. (In case there is a collision of the glider's canopy with the reserve, or low stability of the canopy).

The sink rate increases dramatically in case of the mirror effect e.i. glider and reserve are opened at the same time. Production is the key to achieve high stability and safety in reserves. Panels are cut by a CNC cutter to ensure pre-assembly precision and the right shape of panels. The cloth is checked on light tables, the lines are automatically cut under tension to ensure length stability. The entire production process conforms to ISO 9001:2008 requirement. It is necessary to emphasize that the reserve should always be considered the last option. If you ever happen to find yourself in a high-risk situation it is strongly recommended to follow the procedures mentioned below.

We recommend the following procedures concerning our reserve parachute line :

To begin with, we must stress that using a reserve parachute should never be taken for granted or considered to be without risks to the pilot. A reserve parachute is only there to deploy in case of emergency situation.

- A pilot's weight must correspond to the manufacturer recommended weight range to be fully operational. Any intent to use a reserve parachute below or above the manufacturer's recommended weight limitations is dangerous and must be totally avoided.
- Any reserve parachute riser connection to the harness must result with the pilot landing on his legs and standing.
- Once the reserve parachute is deployed, the pilot must disable his paraglider in a symmetrical manner if possible, and as soon as possible.
- Upon landing, the pilot must be ready to cushion the landing with his legs and execute a PLF (Parachute Landing Fall) if necessary or possible.
- Altering the reserve parachute design (risers, connecting points, etc...) is not allowed by the manufacturer. The parachute must be left unmodified to keep it aligned with the certification procedure it went through to assure a proper operational sequence to work.
- In case of a water landing, the parachute must be dried, followed by a line reconditioning.
- It is imperative to be properly trained by a specialized outfit to become familiar with the use of a reserve parachute.

Flight Tests: During a straight flight, the reserve parachute is deployed. In order to obtain accurately reproducible tests by avoiding any interference from the paraglider, the test-pilot releases his paraglider at peak height during a roll to begin with an important instability level.



The maximum sink rate is measured during the last 30 meters, the paragliding wing is released, below or equal to 5,5 m/s under maximum load.

Stability is checked in a subjective visual way (with a rolling effect or not), and is compared against the overall sink rate (an unstable reserve parachute usually demonstrates a higher sink rate).

The reserve parachute opening speed must be less than 5 seconds.

- Structural tests (resistance): consists of verifying the overall structural resistance of the parachute under maximum load for a given horizontal 40 m/s speed. There can not be any failure / damage taking place on the entire riser / line / canopy cascade during the entire procedure.

THE RESERVE PARACHUTE CERTIFICATION CODE EN 12491 IS DESCRIBED AS FOLLOWS:

RECOMMENDATION AND CARE FOR THE PARACHUTE AFTER A WATER LANDING:



Recommendation and Care for the Parachute after a Water Landing:

- Let the parachute dry by itself in a shady area.
- Pre-stretch the lines with a 10 kg pull to limit Nylon shrinkage due to humidity.
- Proceed with the repacking procedure according to the manufacturer's manual guidelines.
- Assure a correct reserve parachute installation inside the harness by doing an extraction during a hang-test session.

TO BE NOTED:

An EN12491 certified reserve parachute must theoretically have a touch-down speed, equal or less than 5,5 meters per second (m/s), which corresponds to a 1,80 meter jump. This impacting speed can vary greatly due to a few relevant factors:

The air mass, the overall hooking weight, the paragliding wing configuration and the density altitude.

Two recent flight incidents with use of similar reserve parachute models (X-Tralite) during similar circumstances, showed significant different results:

- One pilot touched-down with a 5,2 m/s sink rate with his paraglider disabled.
- The second pilot touched-down with a 9 m/s sink rate without a neutralized paragliding wing, which equals a free-fall jump from a 4 meter elevation !

The paragliding wing's influence on the overall set-up (paraglider / reserve parachute) is important and not predictable nor quantifiable. The scenario can not be reproduced during the tests.

Note: Our tandem reserve parachutes include the „Rose“ system, which disables the paragliding wing automatically upon successful deployment, thus limiting the paraglider's influence on the overall set-up. This system is not yet available for solo reserve parachutes.

In spite of the positive statistics showing the obvious benefits of using a reserve parachute in case of an emergency, the latter can not be taken for granted at any time or place.

SKY PARAGLIDERS have been designing, producing and distributing reserve parachutes for the last twenty years to date. While in constant search for the best materials available on the market to further and improve our product lines, we prioritize and strive on keeping our client base safe and happy.

Wishing you a lot of safe flights.

SKY Paragliders