



# SAFETY NOTICE

Issued by Angus Pinkerton - Chairman of the Flying & Safety Committee - 23 November 1994

*All pilots (including Safety officers, Coaches and Instructors).*

*If you hold a copy of the BHPA Operations Manual this notice must be inserted into it and retained until it is withdrawn or superseded on instructions from the Chairman FSC.*

## Parachutes

Investigation into the death of the second pilot involved in the mid-air collision on Sunday 5th June 1994 has now revealed that he also successfully deployed his pulled down apex parachute at about 2000 feet above ground level. Analysis of the electronic barograph recording of the flight shows that the pilot impacted the ground at a speed of approximately 11 metres per second (roughly equivalent to a fall of 6 metres). Whilst this rate of descent would be expected to lead to serious injury, albeit survivable given a favourable landing position, in this case (as with many hang glider reserve deployments) it would appear that the pilot had little control over his body position and impacted head first.

Reports from experienced parachute professionals presented at BHPA Parachute Seminars have previously suggested that a maximum rate of descent for any reserve should be less than 7.5 metres per second at maximum all up weight (roughly equivalent to a fall of 3 metres). The DHV Gutesiegel requirements include a maximum descent rate of no more than 6.8 metres per second (measured with a 105kg dummy) which equates to a fall of about 2.5 metres.

The parachute has been examined. It is an 18 gore, pulled down apex 'Paraclete' reserve. The chute measures 264 cms in nominal radius along a main seam (244 cms of fabric from the peripheral hem to the apex hem plus an additional 20cm of lines to the centre of the crown), giving a nominal fabric area of 22m<sup>2</sup> ( $\pi r^2$ ). (Whilst this is not a strictly accurate method of measuring canopy size, it is a method used by most reserve manufacturers, and is simple for pilots to repeat.) It is understood that this canopy type was also used in reserve systems sold under different names by other companies, and is of similar construction and dimensions to those produced by many other manufacturers.

The total suspended weight in the accident descent is estimated to have been in the order of 122kg (76kg pilot, 10kg harness and equipment, 36kg glider). (As a broken hang glider cannot be relied upon to produce much additional drag, pilots should always include its full weight into the suspended load calculation.) A review of several manuals for reserves of similar size and design has revealed that the suspended load in the accident deployment was not only greater than the maximum usually recommended for the size of the parachute used, but was also above the maximum for the next bigger size of the parachute.

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The FSC recommends that all pilots carefully check that their all up flying weight (including glider) is less than that recommended by the manufacturer of their reserve.

Those pilots that do not have manuals for their reserves should contact the manufacturers. In the meantime the following 'ball park' figures for pulled down apex reserves may help:

**SMALLER SIZE:**

nominal fabric area (measured as above) = around 23m<sup>2</sup>

number of gores - usually 16

manufacturer's typical recommended max. susp. weight = 106kg

**MEDIUM SIZE:**

nominal fabric area (measured as above) around 28m<sup>2</sup>

number of gores = 18 (sometimes 16)

manufacturer's typical recommended max. susp. weight = 120kg

**LARGER SIZE:**

Larger sizes of p.d.a. reserve exist but the FSC currently has insufficient information to suggest typical figures.