



## Flight test report



Manufacturer	<b>Mac Para Technology</b>	Certification number	PG_0146.2008
Address	1.maje 823, P.O.Box 26 756 61 Roznov p. R. Czech Republic	Date of flight test	21. 05. 2008
Representative	None	Place of test	Villeneuve
Glider model	<b>Velvet 23</b>	<b>Classification</b>	<b>D</b>
Trimmer	yes: closed		
	<b>Test pilot</b> Fukuoka Seiko		Zoller Alain
	<b>Harness</b> Sup'air - Altiplume		Mac Para Technology - Goya L
	<b>Total weight in flight (kg)</b> 70		110

Test item	Rating	Observer 1	Observer 2	Observer 3
<b>1. Inflation/Take-off</b>	<b>A</b>			
Rising behaviour	Smooth, easy and constant rising	A	Smooth, easy and constant rising	A
Special take off technique required	No	A	No	A
<b>2. Landing</b>	<b>A</b>			
Special landing technique required	No	A	No	A
<b>3. Speed in straight flight</b>	<b>B</b>			
Trim speed more than 30 km/h	Yes	A	Yes	A
Speed range using the controls larger than 10 km/h	Yes	A	Yes	A
Minimum speed	Less than 25 km/h	A	25 km/h to 30 km/h	B
<b>4. Control movement</b>	<b>C</b>			
<i>Max. weight in flight up to 80 kg</i>				
Symmetric control pressure / travel	Increasing / greater than 55 cm	A	not available	0
<i>Max. weight in flight 80 kg to 100 kg</i>				
Symmetric control pressure / travel	not available	0	not available	0
<i>Max. weight in flight greater than 100 kg</i>				
Symmetric control pressure / travel	not available	0	Increasing / 50 cm to 65 cm	C
<b>5. Pitch stability exiting accelerated flight</b>	<b>A</b>			
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
<b>6. Pitch stability operating controls during accelerated flight</b>	<b>A</b>			
Collapse occurs	No	A	No	A
<b>7. Roll stability and damping</b>	<b>A</b>			
Oscillations	Reducing	A	Reducing	A
<b>8. Stability in gentle spirals</b>	<b>A</b>			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
<b>9. Behaviour in a steeply banked turn</b>	<b>B</b>			
Sink rate after two turns	More than 14 m/s	B	More than 14 m/s	B
<b>10. Symmetric front collapse</b>	<b>C</b>			
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 30° to 60° / Keeping course	B
Cascade occurs	No	A	No	A
<i>With accelerator</i>				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A

Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Entering a turn of 90° to 180°	C
Cascade occurs	No	A	No	A
<b>11. Exiting deep stall (parachutal stall)</b>	<b>A</b>			
Deep stall achieved	Yes	A	Yes	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Change of course	Changing course less than 45°	A	Changing course less than 45°	A
Cascade occurs	No	A	No	A
<b>12. High angle of attack recovery</b>	<b>A</b>			
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Cascade occurs	No	A	No	A
<b>13. Recovery from a developed full stall</b>	<b>B</b>			
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 30° to 60°	B
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Less than 45°	A
Line tension	Most lines tight	A	Most lines tight	A
<b>14. Asymmetric collapse</b>	<b>C</b>			
<i>With 50% collapse</i>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	A	Less than 90° / Dive or roll angle 15° to 45°	A
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 75% collapse</i>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	A	Less than 90° / Dive or roll angle 45° to 60°	C
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 50% collapse and accelerator</i>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	A	Less than 90° / Dive or roll angle 15° to 45°	A
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<i>With 75% collapse and accelerator</i>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 15° to 45°	A	90° to 180° / Dive or roll angle 45° to 60°	C
Re-inflation behaviour	Spontaneous re-inflation	A	Spontaneous re-inflation	A
Total change of course	Less than 360°	A	Less than 360°	A
Collapse on the opposite side occurs	No	A	No	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
<b>15. Directional control with a maintained asymmetric collapse</b>	<b>A</b>			
Able to keep course	Yes	A	Yes	A
180° turn away from the collapsed side possible in 10 s	Yes	A	Yes	A
Amount of control range between turn and stall or spin	More than 50 % of the symmetric control travel	A	More than 50 % of the symmetric control travel	A
<b>16. Trim speed spin tendency</b>	<b>A</b>			
Spin occurs	No	A	No	A

<b>17. Low speed spin tendency</b>	<b>A</b>			
Spin occurs	No	A	No	A
<b>18. Recovery from a developed spin</b>	<b>A</b>			
Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
Cascade occurs	No	A	No	A
<b>19. B-line stall</b>	<b>A</b>			
Change of course before release	Changing course less than 45°	A	Changing course less than 45°	A
Behaviour before release	Remains stable with straight span	A	Remains stable with straight span	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 30° to 60°	A
Cascade occurs	No	A	No	A
<b>20. Big ears</b>	<b>A</b>			
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
<b>21. Big ears in accelerated flight</b>	<b>A</b>			
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	A	Stable flight	A
<b>22. Behaviour exiting a steep spiral</b>	<b>D</b>			
Tendency to return to straight flight	Spontaneous exit	A	Turn remains constant	D
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	With pilot action	D
Sink rate when evaluating spiral stability [m/s]	18		28	
<b>23. Alternative means of directional control</b>	<b>A</b>			
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
<b>24. Any other flight procedure and/or configuration described in the user's manual</b>	<b>0</b>			
Procedure works as described	not available	0	not available	0
Procedure suitable for novice pilots	not available	0	not available	0
Cascade occurs	not available	0	not available	0
<b>25. Comments of test pilot</b>				
Comments				