

Flight test report: EN 926-2:2013 & LTF 91/09

Manufacturer	Ozone Gliders	Certification number	PG_1471.2019
Address	2, Queens Drive LA46LN . UK	Flight test	30.04.2019
Glider model	Mantra M7 S	Classification	D
Serial number	PR3-U-10B-081	Representative	Luc Armant
Trimmer	no	Place of test	Villeneuve
Folding lines used	yes		

Test pilot	Philippe Dupont	Claude Thurnheer
Harness	Supair - Altiplume S	Dudek - ZeroGravity
Harness to risers distance (cm)	43	43
Distance between risers (cm)	40	44
Total weight in flight (kg)	70	85

1. Inflation/Take-off	C		
Rising behaviour	Overshoots, shall be slowed down to avoid a front collapse	C	Overshoots, shall be slowed down to avoid a front collapse
Special take off technique required	No	A	No
2. Landing	A		
Special landing technique required	No	A	No
3. Speed in straight flight	B		
Trim speed more than 30 km/h	Yes	A	Yes
Speed range using the controls larger than 10 km/h	Yes	A	Yes
Minimum speed	25 km/h to 30 km/h	B	25 km/h to 30 km/h
4. Control movement	A		
Max. weight in flight up to 80 kg			
Symmetric control pressure / travel	Increasing / greater than 55 cm	A	not available
Max. weight in flight 80 kg to 100 kg			
Symmetric control pressure / travel	not available	0	Increasing / greater than 60 cm
Max. weight in flight greater than 100 kg			
Symmetric control pressure / travel	not available	0	not available
5. Pitch stability exiting accelerated flight	A		
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°
Collapse occurs	No	A	No
6. Pitch stability operating controls during accelerated flight	A		
Collapse occurs	No	A	No
7. Roll stability and damping	A		
Oscillations	Reducing	A	Reducing
8. Stability in gentle spirals	A		
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit
9. Behaviour exiting a fully developed spiral dive	B		
Initial response of glider (first 180°)	Immediate reduction of rate of turn	A	No immediate reaction
Tendency to return to straight flight	Spontaneous exit (g force decreasing, rate of turn decreasing)	A	Spontaneous exit (g force decreasing, rate of turn decreasing)
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	720° to 1 080°, spontaneous recovery
10. Symmetric front collapse	D		
Approximately 30 % chord			
Entry	Rocking back less than 45°	A	Rocking back less than 45°

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° Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
At least 50% chord				
Entry	Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery	Recovery through pilot action in less than a further 3 s	D	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° / Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
With accelerator				
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 30° to 60° / Keeping course	B	Dive forward 0° to 30° / Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
11. Exiting deep stall (parachutal stall)				
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
12. High angle of attack recovery				
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Cascade occurs	No	A	No	A
13. Recovery from a developed full stall				
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Greater than 45°	C
Line tension	Most lines tight	A	Most lines tight	A
14. Asymmetric collapse				
Small asymmetric collapse				
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 (or only a small number of collapsed cells with a spontaneous re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
Large asymmetric collapse				
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 15° to 45°	B
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 (or only a small number of collapsed cells with a spontaneous re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
Small asymmetric collapse with fully activated accelerator				
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 (or only a small number of collapsed cells with a spontaneous re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
Large asymmetric collapse with fully activated accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	90° to 180° / Dive or roll angle 15° to 45°	B	90° to 180° / Dive or roll angle 15° to 45°	B
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 (or only a small number of collapsed cells with a spontaneous re-inflation)	A	No (or only a small number of collapsed cells with a spontaneous re-inflation)	A
Twist occurs	No	A	No	A
Cascade occurs	No	A	No	A
Folding lines used	Yes		Yes	
15. Directional control with a maintained asymmetric collapse				
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
16. Trim speed spin tendency				
Spin occurs	No	A	No	A
17. Low speed spin tendency				
Spin occurs	No	A	No	A
18. Recovery from a developed spin				
Spin rotation angle after release	Stops spinning in 180° to 360°	D	Stops spinning in 90° to 180°	B
Cascade occurs	No	A	No	A
19. B-line stall				
Change of course before release	not available	0	not available	0
Behaviour before release	not available	0	not available	0
Recovery	not available	0	not available	0
Dive forward angle on exit	not available	0	not available	0
Cascade occurs	not available	0	not available	0
20. Big ears				
Entry procedure	Standard technique	A	Standard technique	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
21. Big ears in accelerated flight				
Entry procedure	Standard technique	A	Standard technique	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Recovery through pilot action in less than a further 3 s	B	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
22. Alternative means of directional control				
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
23. Any other flight procedure and/or configuration described in the user's manual				
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
24. Comments of test pilot				

Big ears done with B3 - B-Line stall
test excluded from User's Manual

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