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Flight test report



Manufacturer Airwave, Villinger GmbH Certification number PG_0145.2008

Address Gewerbepark 6 Date of flight test 25. 04. 2008
6142 Mieders

Austria

Representative Goldsmith Bruce Place of test Villeneuve

Glider model Magic 5 L Classification D

Trimmer no

Tilliller 110				
•	Thurnheer Claude Advance - Progress M		Zoller Alain Airwave - GT II M	
Total weight in flight (kg)	105		120	
1. Inflation/Take-off	С			
Rising behaviour	Overshoots, shall be slowed down to avoid a front collapse	С	Overshoots, shall be slowed down to avoid a front collapse	С
Special take off technique required	No	Α	No	Α
2. Landing	Α			
Special landing technique required	No	Α	No	Α
3. Speed in straight flight	В			
Trim speed more than 30 km/h	Yes	Α	Yes	Α
Speed range using the controls larger than 10 km/h	Yes	Α	Yes	Α
Minimum speed	25 km/h to 30 km/h	В	25 km/h to 30 km/h	В
4. Control movement	С			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	not available	0	not available	0
Max. weight in flight 80 kg to 100 kg				
Symmetric control pressure / travel	not available	0	not available	0
Max. weight in flight greater than 100 kg				
Symmetric control pressure / travel	Increasing / 50 cm to 65 cm	С	Increasing / 50 cm to 65 cm	С
5. Pitch stability exiting accelerated flight	A			
Dive forward angle on exit	Dive forward less than 30°	Α	Dive forward less than 30°	Α
Collapse occurs	No	Α	No	Α
6. Pitch stability operating controls during accelerated flight	Α			
Collapse occurs	No	Α	No	Α
7. Roll stability and damping	Α			
Oscillations	Reducing	Α	Reducing	Α
8. Stability in gentle spirals	A			
Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
9. Behaviour in a steeply banked turn	В			
Sink rate after two turns	More than 14 m/s	В	More than 14 m/s	В
10. Symmetric front collapse	С			
Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in less than 3 s	Α
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 30° to 60° / Keeping course	В
Cascade occurs	No	Α	No	Α
With accelerator				
Entry	Rocking back greater than 45°	С	Rocking back less than 45°	Α
Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in 3 s to 5 s	В

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

17. Low speed spin tendency D	
Spin occurs No A Yes	D
18. Recovery from a developed spin A	
Spin rotation angle after release Stops spinning in less than 90° A Stops spinning in less than 90°	Α
Cascade occurs No A No	Α
19. B-line stall C	
Change of course before release Changing course less than 45° A Changing course less than 45°	Α
Behaviour before release Remains stable without straight C Remains stable with straight span span	Α
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s	Α
Dive forward 0° to 30° A Dive forward 30° to 60°	Α
Cascade occurs No A No	Α
20. Big ears B	
Entry procedure Dedicated controls A Dedicated controls	Α
Behaviour during big ears Stable flight A Stable flight	Α
Recovery through pilot action in B Spontaneous in less than 3 s less than a further 3 s	Α
Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30°	Α
21. Big ears in accelerated flight B	
Entry procedure Dedicated controls A Dedicated controls	Α
Behaviour during big ears Stable flight A Stable flight	Α
Recovery through pilot action in B Spontaneous in 3 s to 5 s less than a further 3 s	Α
Dive forward 0° to 30° A Dive forward 0° to 30°	Α
Behaviour immediately after releasing the accelerator while Stable flight A Stable flight maintaining big ears	Α
22. Behaviour exiting a steep spiral D	
Tendency to return to straight flight Turn remains constant D Turn remains constant	D
Turn angle to recover normal flight With pilot action D With pilot action	D
Sink rate when evaluating spiral stability [m/s] 20 28	
23. Alternative means of directional control	
180° turn achievable in 20 s Yes A Yes	Α
Stall or spin occurs No A No	Α
24. Any other flight procedure and/or configuration 0 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
25. Comments of test pilot	
Comments	