

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

Manufacturer	ParAAvis Co.	Certification number	PG_1248.2017
Address	17A/2 st.Iskry 129344 Moscow Russia	Flight test	05.10.2017
Glider model	Ray M	Classification	C
Serial number	Pr-5068	Representative	None
Trimmer	no	Place of test	Villeneuve
Folding lines used	no		
Test pilot		Claude Thurnheer	Alain Zoller
Harness		Niviuk - Hamak M	Gin Gliders - Gingo 2 L
Harness to risers distance (cm)		44	43
Distance between risers (cm)		44	46
Total weight in flight (kg)		85	105

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	C
Special take off technique required	No	A	No	A
2. Landing	A			
Special landing technique required	No	A	No	A
3. Speed in straight flight	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	25 km/h to 30 km/h	B	25 km/h to 30 km/h	B
4. Control movement	C			
Max. weight in flight up to 80 kg				
Symmetric control pressure / travel	Increasing / 40 cm to 55 cm	C	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	not available	0	Increasing / greater than 65 cm	A
5. Pitch stability exiting accelerated flight	A			
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
6. Pitch stability operating controls during accelerated flight	A			
Collapse occurs	No	A	No	A
7. Roll stability and damping	A			
Oscillations	Reducing	A	Reducing	A
8. Stability in gentle spirals	A			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
9. Behaviour exiting a fully developed spiral dive	A			
Initial response of glider (first 180°)	Immediate reduction of rate of turn	A	Immediate reduction of rate of turn	A
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)	A
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	A	Less than 720°, spontaneous recovery	A
10. Symmetric front collapse	C			
Approximately 30 % chord			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		No		No	
At least 50% chord					
Entry		Rocking back less than 45°	A	Rocking back less than 45°	A
Recovery		Spontaneous in 3 s to 5 s	B	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
Folding lines used		No		No	
With accelerator					
Entry		Rocking back less than 45°	A	Rocking back greater than 45°	C
Recovery		Spontaneous in 3 s to 5 s	B	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
Folding lines used		No		No	
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 30° to 60°	B
Collapse		No collapse	A	No collapse	A
Cascade occurs (other than collapses)		No	A	No	A
Rocking back		Greater than 45°	C	Less than 45°	A
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 15° to 45°	A	Less than 90° / Dive or roll angle 0° to 15°	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		No		No	
Large asymmetric collapse					
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		Yes, no turn reversal	C	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		No		No	
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 15° to 45°	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	No		No	
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 45° to 60°	C	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	Yes, no turn reversal	C	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	No		No	
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 90° to 180°	B	Stops spinning in 90° to 180°	B
Cascade occurs	No	A	No	A
19. B-line stall				
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 0° to 30°	A
Cascade occurs	No	A	No	A
20. Big ears				
Entry procedure	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Unstable flight	C	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	Dedicated controls	A	Dedicated controls	A
Behaviour during big ears	Stable flight	A	Stable flight	A
Recovery	Recovery through pilot action in less than a further 3 s	B	Recovery through pilot action in less than a further 3 s	B
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				