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**Advance Thun AG** 

test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

Manufacturer



Certification number PG\_2491.2024

## Flight test report: EN 926-2:2013+A1:2021\* and NfL 2-565-20

	Address	Uttigenstrasse 87 3600 Thun		Flight test	ber	30.10.2024 30.10.2024	
	Glider model Serial number Trimmer Folding lines used	Switzerland ALPHA 8 DLS 28 106861 no no		Classification Representative Place of test		A None Villeneuve	
	Test pilot		Claude Thurnh	neer		Anselm Rauh	
Harness Harness to risers distance [cm] Distance between risers [cm]		Advance Thun AG Success 4 M 43 44		Niviuk Makan L 41 48			
	Total weight in fligh	t [kg]	85			125	
	1. Inflation/Take-off Rising behaviour		A Smooth, easy and cor	nstant rising	Α	Smooth, easy and constant rising	А
	Special take off technique	required	No		Α	No	Α
	2. Landing Special landing technique required  3. Speed in straight flight Trim speed more than 30 km/h Speed range using the controls larger than 10 km/h		A No		Α	No	Α
			<b>A</b> Yes		Α	Yes	А
			Yes		Α	Yes	Α
	Minimum speed		Less than 25 km/h		Α	Less than 25 km/h	Α
4. Control movement  Max. weight in flight up to 80 kg  Symmetric control pressure / travel		A not available		0	not available	0	
	Max. weight in flight 80 k Symmetric control pressure	-	Increasing / greater th	an 60 cm	Α	not available	0
	Max. weight in flight greater than 100 kg Symmetric control pressure / travel		not available		0	Increasing / greater than 65 cm	Α
	<b>5. Pitch stability exiting a</b> Dive forward angle on exit		A Dive forward less than	1 30°	Α	Dive forward less than 30°	Α
	Collapse occurs		No		Α	No	Α
	6. Pitch stability operating accelerated flight	ng controls during	Α				
	Collapse occurs		No		Α	No	Α
	7. Roll stability and damp Oscillations	ping	<b>A</b> Reducing		Α	Reducing	Α
	8. Stability in gentle spira Tendency to return to strai		A Spontaneous exit		Α	Spontaneous exit	Α

Initial response of glober (first 180")  Tondoncy to return to straight light  Socrameous ent to force decreasing, rate of burn  A content of the content of	9. Behaviour exiting a fully developed spiral dive	A			
decreasing) Least than 7201, sportaneous recovery A Reco	Initial response of glider (first 180°)		Α	Immediate reduction of rate of turn	Α
Approximately 30 % chord Entry Recovery Special basis lies than 40° A Recovery Special basis lies than 40° A Special basis lies than 3 s A Special basis lies than 3 s A Special basis lies than 3 s A No A No A Recovery Recovery Recovery Recovery Recovery Recovery Recovery Special basis lies than 3 s A No A No A Recovery Special basis lies than 40° A No A N	Tendency to return to straight flight		Α		Α
Approximately 30 % chord  Entry Rocking back less than 45" A Rocking back less than 45" A Rocking back less than 45" A Spontaneous in less than 3 s A Dive forward angle on exit Change of course Dive forward 0"to 30" / Keeping course A No A No A No A Folding lines used No A No A No A Rocking back less than 45" A Rocking back less than	Turn angle to recover normal flight	Less than 720°, spontaneous recovery	Α	Less than 720°, spontaneous recovery	Α
Recovery  Spontaneous in less than 3 s	10. Symmetric front collapse Approximately 30 % chord	A			
Dive forward angle on exit Change of course    Dive forward 0° to 30° / Keeping course   A   No   A   No   A	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Cascade occurs  No  A No  Cascade occurs  No  No  No  A No	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Folding lines used  No A No	Dive forward angle on exit Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
At least 50% chord 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  No A No A No A Rocking back less than 45° A No A No A No A No A Rocking back less than 45° A No A N	Cascade occurs	No	Α	No	Α
Entry Rocking back less than 45° A 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 or 10 30° / Keeping course A Cascade occurs  No A No A No A No A No A No A Recovery  Entry Rocking back less than 45° A Rocking	Folding lines used	No	Α	No	Α
Recovery  Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward on the sum of	At least 50% chord	Dealing healt less than 459	^	Dooling book loss than 45°	٨
Dive forward angle on exit / Change of course  Dive forward 0° to 30° / Keeping course  A Dive forward 0° to 30° / Keeping course  A No  A No  A No  A No  A No  A No  A With accelerator  Entry  Rocking back less than 45°  A Rocking back less than 45°  A Rocking back less than 45°  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 Dive forward 0° to 30° / Keeping course  A No  A Spontaneous in less than 3 s  A No  Cascade occurs  A No  Cascade occurs  A No  A No	•	•			
Cascade occurs  No  No  A  No  A  No  A  No  A  No  A  With accelerator  Entry  Rocking back less than 45°  A  Recovery  Spontaneous in less than 3 s  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Cascade occurs  No  A  No  A  Dive forward 0° to 30° / Keeping course  A  Cascade occurs  No  A  No  A  Dive forward 0° to 30° / Keeping course  A  Cascade occurs  No  A  No  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / Keeping course  A  Cascade occurs  No  A  No  A  Dive forward 0° to 30° / Keeping course  A  Dive forward 0° to 30° / A  Dive forward 0°	•				
Folding lines used No No A No A No A No A No A 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 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A No A N	•				
With accelerator  Entry Rocking back less than 45° A 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° / Keeping course A No A N					
Entry Rocking back less than 45° A 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 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A No A N	•	NO	А	No	А
Recovery  Spontaneous in less than 3 s  A Dive forward on to 30° / Keeping course  A Dive forward on to 30° / Keeping course  A No  A Spontaneous in less than 3 s  A Dive forward on to 30°  A Dive forward on to 30°  A Dive forward on to 30°  A Changing course less than 45°  A Changing course less than 45°  A No					
Dive forward angle on exit / Change of course  Dive forward 0° to 30° / Keeping course  A Dive forward 0° to 30° / Keeping course  A No  A Dive forward 0° to 30°  A No  A N	Entry	-	А	-	Α
Cascade occurs  No A No A No A No A No A No A 11. Exiting deep stall (parachutal stall) Deep stall achieved Yes A Recovery Spontaneous in less than 3 s A Dive forward angle on exit Dive forward 0° to 30° A Changing course less than 45° A Cascade occurs No A Cascade occurs No A Dive forward 0° to 30° A	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Folding lines used  No A No A No A No A No A  11. Exiting deep stall (parachutal stall) A Deep stall achieved Yes A Yes A Yes A 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 Change of course Changing course less than 45° A Cascade occurs No A No A No A Spontaneous in less than 45° A Changing course less than 45° A Cascade occurs No A No A No A Spontaneous in less than 3 s A Spontaneous in less than 45° A Spontaneous in less than 3 s A Spontaneous in less	Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
11. Exiting deep stall (parachutal stall)  Deep stall achieved  Yes  A Yes  A Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A Dive forward on to 3000  A Dive forward on to 3000  A Dive forward on to 3000  A Changing course less than 4500  A Changing course less than 4500  A No  12. High angle of attack recovery  Recovery  Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A No  A No  A No  A Spontaneous in less than 3 s  A No  Cascade occurs  No  A	Cascade occurs	No	Α	No	Α
Deep stall achieved  Yes A 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 Change of course Changing course less than 45° A Changing course less than 45° A Changing course less than 45° A No A No A No A Spontaneous in less than 3 s A No	Folding lines used	No	Α	No	Α
Recovery  Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A Dive forward on to 30 on the forward	11. Exiting deep stall (parachutal stall)		۸	Vec	Λ
Dive forward angle on exit  Dive forward 0° to 30°  A Dive forward 0° to 30°  A Changing course less than 45°  A No  A  12. High angle of attack recovery  Recovery  A Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A No  Collapse					
Change of course  Changing course less than 45°  A Changing course less than 45°  A Cascade occurs  No  A No  A No  A No  A Spontaneous in less than 3 s  A Spontaneous in less than 3 s  A No					
Cascade occurs  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  No A  Dive forward 0° to 30° A  No collapse  A  No collapse  A  No collapse  A					
12. High angle of attack recovery  Recovery  Spontaneous in less than 3 s  A  Spontaneous in less than 3 s  A  No  A  No  A  No  A  Dive forward 0° to 30°  A  No collapse  A  No collapse  A  No collapse					
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 A  Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A  Collapse A No collapse A No collapse A	Cascade occurs		Α	No	Α
Cascade occurs  No A  No A  No A  13. Recovery from a developed full stall  Dive forward 0° to 30° A  Dive forward 0° to 30° A  No collapse A  No collapse A  No collapse A	12. High angle of attack recovery Recovery		Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit  Dive forward 0° to 30°  A Dive forward 0° to 30°  A Collapse  A No collapse  A	Cascade occurs	No	Α	No	Α
Dive forward angle on exit  Dive forward 0° to 30°  A Dive forward 0° to 30°  A Collapse  A No collapse  A	13. Recovery from a developed full stall	A			
	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Cascade occurs (other than collapses)  No  A  No  A	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	A			
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°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
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°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
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°	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 (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α
Folding lines used	No	Α	No	Α
Large 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°	Α	Less than 90° / Dive or roll angle 15° to 45°	Α
Re-inflation behaviour	Spontaneous re-inflation	Α	•	Α
Total change of course	Less than 360°	Α	Less than 360°	Α
Collapse on the opposite side occurs	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α	No (or only a small number of collapsed cells with a spontaneous reinflation)	Α
Twist occurs	No	Α	No	Α
Cascade occurs	No	Α	No	Α

Folding lines used	No	Α	No	Α
15. Directional control with a maintained asymmetric collapse	A			
Able to keep course	Yes	Α	Yes	Α
180° turn away from the collapsed side possible in 10 s	Yes	Α	Yes	А
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	A			
Spin occurs	No	Α	No	Α
17. Low speed spin tendency Spin occurs	A No	Α	No	Α
18. Recovery from a developed spin	A			
Spin rotation angle after release	Stops spinning in less than 90°	Α	Stops spinning in less than 90°	Α
Cascade occurs	No	Α	No	Α
19. B-line stall	A			
Change of course before release	Changing course less than 45°	Α	Changing course less than 45°	Α
Behaviour before release	Remains stable with straight span	Α	Remains stable with straight span	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°	А
Cascade occurs	No	Α	No	Α
20. Big ears	Α			
Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Behaviour during big ears	Stable flight	Α	Stable flight	Α
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	Α
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
21. Big ears in accelerated flight	A			
Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Behaviour during big ears	Stable flight	Α	Stable flight	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
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	Α	Stable flight	Α
22. Alternative means of directional control	<b>A</b>		<u> </u>	_
180° turn achievable in 20 s	Yes	Α	Yes	Α
Stall or spin occurs	No	Α	No	Α
23. Any other flight procedure and/or configuration described in the user's manual	0			
Procedure works as described	not available	0	not available	0
Procedure suitable for novice pilots	not available	0	not available	0