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Advance Thun AG

test laboratory for paragliders, paraglider harnesses and paraglider reserve parachutes

Manufacturer



Certification number PG_2421.2024

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

Address	Litting and traces 07				12.06.2024	
Address	Uttigenstrasse 87 3600 Thun		Flight test		12.06.2024	
	Switzerland					
Glider model	SIGMA 12 DLS 24		Classification		С	
Serial number	104633		Representative		None	
Trimmer	no		Place of test		Villeneuve	
Folding lines used	no					
J						
Test pilot		Claude Thurn	heer		Alexandre Jofresa	
·						
Harness		Advance Thu	n AG Success 4 M		Advance Thun AG Success 4 M	1
Harness to risers d	istance [cm]	43			43	
Distance between r	risers [cm]	44			46	
Total weight in fligh	nt [kg]	80			100	
1. Inflation/Take-off		В				
Rising behaviour			ot correction is required	В	Easy rising, some pilot correction is required	В
Thomas bonavious		, , ,			, , , , , , , , , , , , , , , , , , , ,	
Special take off technique	e required	No		Α	No	Α
2. Landing		A				
Special landing technique	e required	No		Α	No	Α
· · ·	·					
3. Speed in straight fligh		В				
Trim speed more than 30 km/h		Yes		Α	Yes	Α
Speed range using the co	ontrols larger than 10 km/h	Yes		Α	Yes	Α
NA to to come and a second		Loop than 25 km/h		۸	25 km/h to 20 km/h	В
Minimum speed		Less than 25 km/h		Α	25 km/h to 30 km/h	Ь
4. Control movement		Α				
Max. weight in flight up	to 80 kg					
Symmetric control pressure / travel		not available		0	not available	0
Max. weight in flight 80	ka to 100 ka					
Symmetric control pressure / travel		Increasing / greater t	han 60 cm	Α	Increasing / greater than 60 cm	Α
Max. weight in flight gre	=					
Symmetric control pressu	re / travel	not available		0	not available	0
5. Pitch stability exiting	accelerated flight	Α				
Dive forward angle on exi	t	Dive forward less that	n 30°	Α	Dive forward less than 30°	Α
Callanaa aasuma		No		٨	No	٨
Collapse occurs		140		Α	No	Α
6. Pitch stability operati accelerated flight	ng controls during	Α				
Collapse occurs		No		Α	No	Α
7. Roll stability and dam	nping	A				
Oscillations		Reducing		Α	Reducing	Α
8. Stability in gentle spirals		A Spontaneous oxit		^	Spontonogus ovit	٨
Tendency to return to stra	aignt tiignt	Spontaneous exit		Α	Spontaneous exit	Α

Initial response of glider (filer 1807) No mendade markino 8 No immediate reaction 1 and 1 No immediate reaction 2 No immediate reaction 2 No immediate reaction 2 No immediate reaction 3 No immediat	9. Behaviour exiting a fully developed spiral dive	В			
thereasing) decreasing) thereasing) decreasing) the decreasing) the decreasing) the decreasing) the decreasing) the decreasing) the standard of the cover normal flight the standard of the cover normal fligh	Initial response of glider (first 180°)	No immediate reaction	В	No immediate reaction	В
Approximately 30 % chord Entry Rodsing back less than 45" A Rodsing back less than 45" Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A No Rodsing back less than 45" Recovery Recovery Rodsing back less than 45" A No Rodsing back less than 45" Recovery Rodsing lanes used No A No A No A No A Rodsing back less than 45" Recovery Recovery Reading back less than 45" A Rodsing back less than 45" Recovery Recovery Rodsing back less than 45" A Rodsing back less than 45" Recovery Recovery Recovery Recovery Recovery Recovery Recovery Recovery Recovery No A Rodsing back less than 3 s A Spontaneous in less than 3 s A Rodsing back less than 45" Recovery Recovery Recovery Recovery Recovery Recovery Recovery Recovery No A Rodsing back less than 45" Recovery Rec	Tendency to return to straight flight		Α	Spontaneous exit (g force decreasing, rate of turn decreasing)	Α
Approximately 30 % chord Entry Rocking back less than 45° A Sportaneous in less than 3 s A Sportaneous in less than 3 s A Rocking back less than 45° A Rocking ba	Turn angle to recover normal flight	Less than 720°, spontaneous recovery	Α	Less than 720°, spontaneous recovery	A
Recovery Spontaneous in less than 3 s		В			
Dive forward angle on exit Change of course Dive forward or to 30" / Keeping course No A No A No At least 50% chord Entry Recovery Brownerd angle on exit / Change of course Dive forward or to 30" / Keeping course Dive forward or to 30" / Keeping course Dive forward angle on exit / Change of course Dive forward or to 30" / Keeping course Dive forward angle on exit / Change of course Dive forward or to 30" / Keeping course Dive forward or to 30" / Keeping course A No A No With accelerator Entry Recovery Recovery Spontaneous in 3 s 10 5 s B Spontaneous in 3 s 10 5 s Dive forward angle on exit / Change of course Dive forward or to 30" / Keeping course Dive forward or to 30" / Keeping course A No With accelerator Entry Recovery Spontaneous in 3 s 10 5 s B Spontaneous in 3 s 10 5 s Dive forward angle on exit / Change of course Dive forward or to 30" / Keeping course Cascade occurs No A No A No 11. Exiting deep stall (parachutal stall) Dive forward or to 30" A Dive forward or to 30" Change of course Change	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	ŀ
At least 50% 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 No Dive forward angle on exit / Change of course Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course Cascade occurs No A No With accelerator Entry Rocking back less than 46° A Rocking back less than 46° A No With accelerator Entry Rocking back less than 46° A Rocking back less than 46° A Rocking back less than 46° B Spontaneous in 3 s to 5 s B Spontaneous in 3 s to 5 s B Spontaneous in 3 s to 5 s Colding lines used No A No 11. Exiting deep stall (parachutal stall) Dive forward on to 30° / Keeping course Items than 3 s Colding lines used No A No 12. High angle of exit Change of Course Change course Items than 3 s Colding course less than 45° A Changing course less than 45° A Rocking back less t	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	
At least 50% chord Initity Recovery Rec	Dive forward angle on exit Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	
At least 50% chord intry	Cascade occurs	No	Α	No	
Recovery Spontaneous in less than 3 s A Spontaneous in 3 s to 5 s A Spontaneous in 3 s to 5 s A Spontaneous in 3 s to 5 s A Spontaneous in 1 s s to 5 s A Spontaneous in 3 s to	Folding lines used	No	Α	No	
Dive forward of to 30° / Keeping course Dive forward of to 30° / Keeping course A Dive forward of to 30° / Keeping course A No No A No With accelerator Entry Rocking back less than 45° A No No A No II. Exiting deep stall (parachutal stall) A Yes A Yes A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 45° A Changing course less than 45° Change of course Cascade occurs No C Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s A No 13. Recovery from a developed full stall Dive forward of to 30° A Dive forward of to 30° A Dive forward of to 30°	_	Rocking back less than 45°	Α	Rocking back less than 45°	
Cascade occurs No No A No No A No No No A No No No No A No	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	
Folding lines used No No No A No No A No With accelerator Entry Recovery Recovery Spontaneous in 3 s to 5 s Dive forward angle on exit / Change of course Dive forward 0° to 30° / Keeping course Dive forward 0° to 30° / Keeping course Dive forward 0° to 30° / Keeping course A No No A No No A No II. Exiting deep stall (parachutal stall) A Yes Recovery Spontaneous in less than 3 s A Yes Spontaneous in less than 3 s A Spontaneous in less than 3 s Dive forward 0° to 30° A Poive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Changing course less than 45° A No II. Exiting deep stall (parachutal stall) A Changing course less than 45° Changing course less than 45° A Changing course less than 45° A No II. Exiting deep stall (parachutal stall) A Changing course less than 45° A Changing course less than 45° A Changing course less than 45° A No II. Exiting deep stall (parachutal stall) Changing course less than 45° A Changing course less than 45° A No II. Exiting deep stall (parachutal stall) Changing course less than 45° A Changing course less than 45° A No II. Exiting deep stall (parachutal stall) Changing course less than 45° A Dive forward 0° to 30° A No II. Exiting deep stall (parachutal stall) Changing course less than 45° A Dive forward 0° to 30°	Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	
With accelerator Entry Recovery Spontaneous in 3 s to 5 s B Spontaneous in 3 s to 5 s 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 Clascade occurs No A No A No 11. Exiting deep stall (parachutal stall) A Yes A Yes Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° A No Change of course Changing course less than 45° A No 12. High angle of attack recovery Spontaneous in 3 s to 5 s Cascade occurs No A No A No Changing course less than 45° A No Changing course less than 45° A No Cascade occurs No A No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No Cascade occurs No A No	Cascade occurs	No	Α	No	
Recovery Rocking back less than 45° Recovery Spontaneous in 3 s to 5 s B Spontaneous in 3 s to 5 s Dive forward or to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A Dive forward 0° to 30° / Keeping course A No No A No 1. Exiting deep stall (parachutal stall) A Yes Recovery Spontaneous in less than 3 s Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° Changing course less than 45° A No Cascade occurs No A No C Spontaneous in 3 s to 5 s	Folding lines used	No	Α	No	
Recovery Spontaneous in 3 s to 5 s B Spontaneous in 3 s to 5 s 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 II. Exiting deep stall (parachutal stall) A Yes Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° Change of course Changing course less than 45° A No II. Exiting deep stall (parachutal stall) Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A No II. Exiting deep stall (parachutal stall) Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A No II. Exiting deep stall (parachutal stall) Dive forward 0° to 30° A No A No A No III. Exiting deep stall (parachutal stall) A Dive forward 0° to 30°	Nith accelerator				
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 II. Exiting deep stall (parachutal stall) A Yes Recovery Spontaneous in less than 3 s Dive forward 0° to 30° / Keeping course A No II. Exiting deep stall (parachutal stall) A Yes Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° Changing course less than 45° A Changing course less than 45° A No II. High angle of attack recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No II. High angle of attack recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30°	Entry	Rocking back less than 45°	Α	Rocking back less than 45°	
Cascade occurs No No A No No A No 11. Exiting deep stall (parachutal stall) A Deep stall achieved Yes Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward angle on exit Changing course less than 45° Changing course less than 45° A No 12. High angle of attack recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s A No A No 13. Recovery from a developed full stall Dive forward 0° to 30° A Dive forward 0° to 30°	Recovery	Spontaneous in 3 s to 5 s	В	Spontaneous in 3 s to 5 s	
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	
A Peep stall achieved 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° Change of course Cascade occurs No A No Cascade occurs No C C C C C C C C C C C C C C C C C C	Cascade occurs	No	Α	No	
Deep stall achieved Yes Spontaneous in less than 3 s A Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° Changing course less than 45° A Changing course less than 45° Cascade occurs No A No 12. High angle of attack recovery Recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No 13. Recovery from a developed full stall Dive forward 0° to 30° A Dive forward 0° to 30°	Folding lines used	No	Α	No	
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s Dive forward angle on exit Dive forward 0° to 30° Change of course Changing course less than 45° No A Changing course less than 45° A Changing course less than 45° A No 12. High angle of attack recovery Recovery C Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s A No 13. Recovery from a developed full stall Dive forward 0° to 30° A Dive forward 0° to 30°	— · · · · · · · · · · · · · · · · · · ·		٨	Vec	
Dive forward angle on exit Dive forward 0° to 30° Change of course Changing course less than 45° A Changing course less than 45° Cascade occurs No A No 12. High angle of attack recovery Recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s No A No 13. Recovery from a developed full stall Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30°					
Change of course Changing course less than 45° A Changing course less than 45° A No 12. High angle of attack recovery Recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No 13. Recovery from a developed full stall Dive forward one to 30° A Dive forward 0° to 30° A Dive forward 0° to 30°					
Cascade occurs No A No 12. High angle of attack recovery Recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No 13. Recovery from a developed full stall Dive forward of to 30° A Dive forward 0° to 30°					
I2. High angle of attack recovery Recovery Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No I3. Recovery from a developed full stall Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30°					
Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s C Spontaneous in 3 s to 5 s Cascade occurs No A No 13. Recovery from a developed full stall Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30°		С			
I3. Recovery from a developed full stall Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30°			С	Spontaneous in 3 s to 5 s	
Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30°	Cascade occurs	No	Α	No	
				Di . (
Collapse No collapse A No collapse					
	Collapse	No collapse	Α	No collapse	

Rocking back	Less than 45°	Α	Less than 45°	Α
Line tension	Most lines tight	Α	Most lines tight	Α
14. Asymmetric collapse	В			
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°	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	90° to 180° / Dive or roll angle 15° to 45°	В	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	90° to 180° / Dive or roll angle 15° to 45°	В	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
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	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	A			
Spin occurs	No	Α	No	Α
17. Low speed spin tendency Spin occurs	A No	Α	No	Α
49. Deceyany from a developed onin	В			
18. Recovery from a developed spin Spin rotation angle after release	Stops spinning in 90° to 180°	В	Stops spinning in 90° to 180°	В
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°	Α
Cascade occurs	No	Α	No	Α
20. Big ears	A			
Entry procedure	Dedicated controls	А	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
21. Big ears in accelerated flight	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	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	A			_
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
Cascade occurs	not available	0	not available	0