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AIR TURQUOISE SA certified by

Flight test report: EN

ISO 9001
BUREAU VERITAS
Certification

Manufacturer	Niviuk Gliders / Air Games S.L.	Certification number	PG_0451.2011
Address	C. Del Ter, 6 – Nave D 17165 La Cellera de Ter Girona Spain	Date of flight test	14. 06. 2011
Representative	Nef Olivier	Place of test	Villeneuve
Glider model	Link 25	Classification	В
Trimmer	no		

Gilder model	LINK 25	Classification		В	
Trimmer	no				
	Test pilot	Thurnheer Claude		Zoller Alain	
		Sup' Air - Altiplume S		Niviuk Gliders - Hamak L	
	Total weight in flight (kg)	·		100	
1. Inflation/Take-off	Total Weight in hight (kg)	A		100	
Rising behaviour		Smooth, easy and constant rising	۸	Smooth, easy and constant rising	Α
Special take off techniq	ue required	No	Α	No	A
2. Landing	uc required	A		140	A
Special landing techniq	ue required	No	Α	No	Α
3. Speed in straight fli		A			, ,
Trim speed more than 3		Yes	Α	Yes	Α
	controls larger than 10 km/h	Yes	Α	Yes	Α
Minimum speed	, and the second se	Less than 25 km/h	Α	Less than 25 km/h	Α
4. Control movement		A			
Max. weight in flight up	to 80 kg				
Symmetric control pres	sure / travel	Increasing / greater than 55 cm	Α	not available	0
Max. weight in flight 80	kg to 100 kg				
Symmetric control pres	sure / travel	not available	0	not available	0
Max. weight in flight gre	eater than 100 kg				
Symmetric control pres	sure / travel	not available	0	Increasing / greater than 65 cm	Α
5. Pitch stability exiting	ng accelerated flight	Α			
Dive forward angle on e	exit	Dive forward less than 30°	Α	Dive forward less than 30°	Α
Collapse occurs		No	Α	No	Α
	ating controls during accelerated	Α			
flight Collapse occurs		No	Α	No	Α
7. Roll stability and da	empina	A	^	INO	^
Oscillations	amping	Reducing	Α	Reducing	Α
8. Stability in gentle s	nirals	A	, ,	reducing	7.
Tendency to return to s		Spontaneous exit	Α	Spontaneous exit	Α
9. Behaviour in a stee		В		opomanoodo om	
Sink rate after two turns		More than 14 m/s	В	More than 14 m/s	В
10. Symmetric front co	ollapse	A			
Entry	-	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery		Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on e	exit / Change of course	Dive forward 0° to 30° / Keeping course	Α	Dive forward 0° to 30° / Keeping course	Α
Cascade occurs		No	Α	No	Α
With accelerator					

Entry	Rocking back less than 45°	Α	Rocking back less than 45°	Α
Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
Dive forward angle on exit / Change of course	Dive forward 0° to 30° / Keeping	Α	Dive forward 0° to 30° / Entering a	Α
Enterior ward unigite on exit.7 Change of course	course	,,	turn of less than 90°	,,
Cascade occurs	No	Α	No	Α
11. Exiting deep stall (parachutal stall)	A			
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	A			
Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
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	В			
With 50% 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 0° to 15°	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	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 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	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 and accelerator				
Change of course until re-inflation / Maximum dive forward or roll angle	90° to 180° / Dive or roll angle 15° to 45°	В	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
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

Spin occurs	16. Trim speed spin tendency	A			
Spin occurs No	Spin occurs	No	Α	No	Α
19. Recovery from a developed spin A Spin rotation angle after release Stops spinning in less than 90° A No A N	17. Low speed spin tendency	A			
Spin rotation angle after release Noo A Noo A Noo A No A No A No A No A	Spin occurs	No	Α	No	Α
Cascade occurs No No No No No No No N	18. Recovery from a developed spin	Α			
19. B-line stall Change of course before release Changing course less than 45° A Changing course less than 3 s A Changing course less than 45° A Changing course less than 3 s A Changing course less than 3 s A Changing course less than 45° A Changing course less than 3 s A Chedicated course course A Dedicated control s A Changing the Caucal Changing less A Changing the accelerator whose plot cated controls A Changing the accelerator while and the 45° A Changing the accelerator while and the 45° A Changing the accelerator while and the 45° A Changing course less than 45° A Changing course with 45° A Changing the accelerator while and further 3 s B Recovery through pilot action in less than 45° A Changing the accelerator while and further 3 s B Recovery through pilot action in less than 45° A Changing the accelerator while and further 3 s B Recovery through pilot action in less than 45° A Changing the accelerator while and further 3 s B Recovery through pilot act	Spin rotation angle after release	Stops spinning in less than 90°	Α	Stops spinning in less than 90°	Α
Change of course before release Behaviour before release Remains stable with straight span span span stable with straight span span span stable with straight span span stable with straight span span span stable with straight span span span span stable with straight span span span span span span span span	Cascade occurs	No	Α	No	Α
Remains stable with straight span Recovery Recovery Spontaneous in less than 3 s A Dive forward 0° to 30° A No A No A No A No A Dive forward 0° to 30° A No A N	19. B-line stall	A			
Recovery Spontaneous in less than 3 s A Spontaneous in less than 3 s A Dive forward 0° to 30° A Dedicated controls A Stable flight A Dive forward 0° to 30° A	Change of course before release	Changing course less than 45°	Α	Changing course less than 45°	Α
Dive forward angle on exit Cascade occurs No No A	Behaviour before release	S S S S S S S S S S S S S S S S S S S	Α	Remains stable with straight span	Α
Cascade occurs No	Recovery	Spontaneous in less than 3 s	Α	Spontaneous in less than 3 s	Α
20. Big ears B Entry procedure Dedicated controls A Dedicated controls A Stable flight B Stable flight B Stable flight A Stabl	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Entry procedure Dedicated controls A Dedicated controls A Stable flight A Dive forward or to 30° A Dive forward 0° to 30° A Dive forward angle on exit Dive forward 0° to 30° A Dive forward 0° to 30° A 21. Big ears in accelerated flight B Entry procedure Dedicated controls A Dedicated controls A Dedicated controls A Dedicated controls A Stable flight A Sta	Cascade occurs	No	Α	No	Α
Behaviour during big ears Recovery Recovery through pilot action in less than 3 s had less than a further 3 s loive forward on to 30° and a further 3 s loive forward 0° to 30° and a less than 3 s less than a further 3 s loive forward 0° to 30° and a less than 3 s less than a further 3 s loive forward 0° to 30° and a less than 3 s less than a further 3 s loive forward 0° to 30° and a less than a further 3 s loive forward 0° to 30° and a less than a further 3 s loive forward 0° to 30° and a less than a further 3 s less than a further 3 s loive forward 0° to 30° and a less than a fur	20. Big ears	В			
Recovery Recovery through pilot action in less than 3 s has been a further 3 s live forward on the stan a further 3 s live forward on to 30° and bive forward on the standard on the	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit Dive forward 0° to 30° Dedicated controls Dedicated controls Stable flight A Stable flight	Behaviour during big ears	Stable flight	Α	Stable flight	Α
21. Big ears in accelerated flight Entry procedure Dedicated controls A Dedicated controls A Stable flight A Recovery Recovery through pilot action in less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward angle on exit Dive forward 0° to 30° A Dive	Recovery		В	Spontaneous in less than 3 s	Α
Entry procedure Behaviour during big ears Stable flight Recovery Recovery through pilot action in less than a further 3 s Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral Tendency to return to straight flight Spontaneous exit Less than 720°, spontaneous exit A Spontaneous exit A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 21 22 23. Alternative means of directional control 180° turn achievable in 20 s Stall or spin occurs No A Yes A Yes A Stall or spin occurs O Cascade occurs not available o not available o not available o cascade occurs Diedicated controls A Dedicated controls A Stable flight A Stable flight A Dive forward 0° to 30° A Dive forward 0° to 30° A Dive forward 0° to 30° A Stable flight A Spontaneous exit A Less than 720°, spontaneous recovery 22 23. Alternative means of directional control A Ves A No O Cascade occurs not available O not available O not available O not available O cascade occurs	Dive forward angle on exit	Dive forward 0° to 30°	Α	Dive forward 0° to 30°	Α
Behaviour during big ears Recovery Recovery through pilot action in less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° Dive forward one dately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral Tendency to return to straight flight Spontaneous exit Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 21 22. Alternative means of directional control 180° turn achievable in 20 s Stable flight A Yes A Yes A Stable flight A Dive forward 0° to 30° A Stable flight A Stable flight A Dive forward 0° to 30° A Stable flight A Stable flight A Stable flight A Dive forward 0° to 30° A Stable flight A Dive forward 0° to 30° A Stable flight A Stable	21. Big ears in accelerated flight	В			
Recovery through pilot action in less than a further 3 s Dive forward angle on exit Dive forward 0° to 30° A Stable flight A Stable flig	Entry procedure	Dedicated controls	Α	Dedicated controls	Α
Dive forward angle on exit Dive forward 0° to 30° A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] A Ves A Yes A Yes A Ye	Behaviour during big ears	Stable flight	Α	Stable flight	Α
Behaviour immediately after releasing the accelerator while maintaining big ears 22. Behaviour exiting a steep spiral A Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 21 22 23. Alternative means of directional control 180° turn achievable in 20 s Stall or spin occurs No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available o not available	Recovery		В		В
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Tendency to return to straight flight Spontaneous exit A Spontaneous exit A Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 21 22 23. Alternative means of directional control 180° turn achievable in 20 s Stall or spin occurs No No A No A No A No A No A Ves A Yes A Yes A Stall or spin occurs No A No Cascade occurs not available not available not available not available 0 second available 0 not available 0 second available 0 not available 0 second available 0 not available 0 not available 0 not available 0 not available 0 second available 0 not available 0 second available 0 not available 0 second available 0 not available 0 not available 0 second available 0 not available 0 second available 0 not available		Stable flight	Α	Stable flight	Α
Turn angle to recover normal flight Less than 720°, spontaneous recovery Sink rate when evaluating spiral stability [m/s] 21 22 23. Alternative means of directional control A Stall or spin occurs No No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available not available not available not available o not available	22. Behaviour exiting a steep spiral	A			
recovery Sink rate when evaluating spiral stability [m/s] 21 23. Alternative means of directional control A 180° turn achievable in 20 s Stall or spin occurs No No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available not available not available 0 not available 0 not available 0 cascade occurs not available 0 not available 0 not available 0 25. Comments of test pilot	Tendency to return to straight flight	Spontaneous exit	Α	Spontaneous exit	Α
23. Alternative means of directional control 180° turn achievable in 20 s Yes A Yes A Stall or spin occurs No No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available o not available	Turn angle to recover normal flight		Α		Α
180° turn achievable in 20 s Yes A Yes A Yes A Stall or spin occurs No A No A No A 24. Any other flight procedure and/or configuration described in the user's manual Procedure works as described not available o not available o not available cascade occurs not available o second occurs o not available	Sink rate when evaluating spiral stability [m/s]	21		22	
Stall or spin occurs No A No A No A No A No A No A A No A A A No A A A A	23. Alternative means of directional control	Α			
24. 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 25. Comments of test pilot	180° turn achievable in 20 s	Yes	Α	Yes	Α
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	Stall or spin occurs	No	Α	No	Α
Procedure suitable for novice pilots not available 0 not available 0 Cascade occurs not available 0 not available 0 not available 0 25. Comments of test pilot		0			
Cascade occurs not available 0 not available 0 25. Comments of test pilot	Procedure works as described	not available	0	not available	0
25. Comments of test pilot	Procedure suitable for novice pilots	not available	0	not available	0
	Cascade occurs	not available	0	not available	0
Comments	25. Comments of test pilot				
	Comments				