



Deutscher Hängegleiterverband e.V. im DAeC
DHV-Technikreferat
LBA-anerkannte Prüfstelle für Hängegleiter und Gleitsegel

GS TESTFLUG LTF 2009 SUNGLIDER ING

Test No 023187-GSTF09-41-Harry
Test date 19.01.2010
Type Sunlider Ing
Test type GS Testflug LTF 2009
Test order Auftrag GS Musterprüfung Sungliders Proto M (Sungliders)
Customer Sungliders
Test standard LTF NFL II-35/03 und 91/09
Test standard 2 EN 926-2:2005
Expert Buntz
Result positive
Billing to: 100%
Technical peculiarities

Datum / Unterschrift (Harald Buntz)

RESULTS

PG test flight (general)

Take off weight [kg] 105
Weight limit for certification [kg] 105
Number of pilots 1
Harness type ADVANCE Success 2+
Harness category GH
Minimum speed [km/h] 23
Trim speed [km/h] 34
Accelerated speed [km/h] 40
Accelerator used? Yes
Trimms -

en : Klassifizierung

en : Klassifizierung A

EN : ERGEBNISDETAILS NACH LTF 2009

1 Inflation/take-off

A

Rising behaviour Smooth, easy and constant rising
Special take off technique required No

2 Landing

A

Special landing technique required No

3 Speeds in straight flight

A

Trim speed more than 30 km/h Yes
Speed range using the controls larger than 10 km/h Yes
Minimum speed Less than 25 km/h

4 Control movement	A
Symmetric control pressure Increasing	
Symmetric control travel Greater than 65 cm	
5 Pitch stability exiting accelerated flight	A
Dive forward angle on exit Dive forward less than 30°	
Collapse occurs No	
6 Pitch stability operating controls during accelerated flight	A
Collapse occurs No	
7 Roll stability and damping	A
Oscillations Reducing	
8 Stability in gentle spirals	A
Tendency to return to straight flight Spontaneous exit	
9 Behaviour in a steeply banked turn	A
Sink rate after two turns Up to 12 m/s	
10.1 Symmetric front collapse	A
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Keeping course	
Cascade occurs No	
10.2 Symmetric front collapse in accelerated flight	A
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Keeping course	
Cascade occurs No	
11 Exiting deep stall (parachutal stall)	A
Deep stall achieved Yes	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Changing course less than 45°	
Cascade occurs No	
12 High angle of attack recovery	A
Recovery Spontaneous in less than 3 s	
Cascade occurs No	
13 Recovery from a developed full stall	A
Dive forward angle on exit Dive forward 0° to 30°	
Collapse No collapse	
Cascade occurs (other than collapses) No	
Rocking back Less than 45°	
Line tension Most lines tight	
14.1 Asymmetric collapse 45-50%	A
Change of course until re-inflation Less than 90°	
Maximum dive forward or roll angle Dive or roll angle 0° to 15°	
Re-inflation behaviour Spontaneous re-inflation	

Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

14.2 Asymmetric collapse 70-75% **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

14.3 Asymmetric collapse 45-50% in accelerated flight **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 0° to 15°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

14.4 Asymmetric collapse 70-75% in accelerated flight **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

15 Directional control with a maintained asymmetric collapse **A**

Able to keep course Yes
180° turn away from the collapsed side possible in 10 s Yes
Amount of control range between turn and stall or spin More than 50 % of the symmetric control travel

16 Trim speed spin tendency **A**

Spin occurs No

17 Low speed spin tendency **A**

Spin occurs No

18 Recovery from a developed spin **A**

Spin rotation angle after release Stops spinning in less than 90°
Cascade occurs No

19 B-line stall **A**

Change of course before release Changing course less than 45°
Behaviour before release Remains stable with straight span
Recovery Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°
Cascade occurs No

20 Big ears **A**

Entry procedure Dedicated controls

Behaviour during big ears Stable flight
Recovery Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°

21 Big ears in accelerated flight

A

Entry procedure Dedicated controls
Behaviour during big ears Stable flight
Recovery Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°
Behaviour immediately after releasing the accelerator while maintaining big ears Stable flight

22 Behaviour exiting a steep spiral

A

Tendency to return to straight flight Spontaneous exit
Turn angle to recover normal flight Less than 720°, spontaneous recovery
Sink rate when evaluating spiral stability [m/s] 14

23 Alternative means of directional control

A

180° turn achievable in 20 s Yes
Stall or spin occurs No

24 Any other flight procedure and/or configuration described in the user's manual

No other flight procedure or configuration described in the user's manual



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GS TESTFLUG LTF 2009 SUNGLIDER ING

Test No 023142-GSTF09-8-Beni
Test date 19.01.2010
Type Sunlider Ing
Test type GS Testflug LTF 2009
Test order Auftrag GS Musterprüfung Sungliders Proto M (Sungliders)
Customer Sungliders
Test standard LTF NFL II-35/03 und 91/09
Test standard 2 EN 926-2:2005
Expert Stocker
Result positive
Billing to: 100%
Technical peculiarities

Datum / Unterschrift (Bernhard Stocker)

RESULTS

PG test flight (general)

Take off weight [kg] 85
Weight limit for certification [kg] 85
Number of pilots 1
Harness type SUP´AIR 02
Harness category GH
Minimum speed [km/h] 22
Trim speed [km/h] 33
Accelerated speed [km/h] 0
Accelerator used? Yes
Trimms -

en : Klassifizierung

en : Klassifizierung B

EN : ERGEBNISDETAILS NACH LTF 2009

1 Inflation/take-off

A

Rising behaviour Smooth, easy and constant rising
Special take off technique required No

2 Landing

A

Special landing technique required No

3 Speeds in straight flight

A

Trim speed more than 30 km/h Yes
Speed range using the controls larger than 10 km/h Yes
Minimum speed Less than 25 km/h

4 Control movement

A

Symmetric control pressure Increasing
Symmetric control travel Greater than 60 cm

5 Pitch stability exiting accelerated flight	A
Dive forward angle on exit Dive forward less than 30°	
Collapse occurs No	
6 Pitch stability operating controls during accelerated flight	A
Collapse occurs No	
7 Roll stability and damping	A
Oscillations Reducing	
8 Stability in gentle spirals	A
Tendency to return to straight flight Spontaneous exit	
9 Behaviour in a steeply banked turn	A
Sink rate after two turns Up to 12 m/s	
10.1 Symmetric front collapse	A
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Keeping course	
Cascade occurs No	
10.2 Symmetric front collapse in accelerated flight	A
Entry Rocking back less than 45°	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Keeping course	
Cascade occurs No	
11 Exiting deep stall (parachutal stall)	A
Deep stall achieved Yes	
Recovery Spontaneous in less than 3 s	
Dive forward angle on exit Dive forward 0° to 30°	
Change of course Changing course less than 45°	
Cascade occurs No	
12 High angle of attack recovery	A
Recovery Spontaneous in less than 3 s	
Cascade occurs No	
13 Recovery from a developed full stall	A
Dive forward angle on exit Dive forward 0° to 30°	
Collapse No collapse	
Cascade occurs (other than collapses) No	
Rocking back Less than 45°	
Line tension Most lines tight	
14.1 Asymmetric collapse 45-50%	A
Change of course until re-inflation Less than 90°	
Maximum dive forward or roll angle Dive or roll angle 0° to 15°	
Re-inflation behaviour Spontaneous re-inflation	
Total change of course Less than 360°	
Collapse on the opposite side occurs No	
Twist occurs No	
Cascade occurs No	

14.2 Asymmetric collapse 70-75% **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

14.3 Asymmetric collapse 45-50% in accelerated flight **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 0° to 15°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

14.4 Asymmetric collapse 70-75% in accelerated flight **A**

Change of course until re-inflation Less than 90°
Maximum dive forward or roll angle Dive or roll angle 15° to 45°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs No
Twist occurs No
Cascade occurs No

15 Directional control with a maintained asymmetric collapse **A**

Able to keep course Yes
180° turn away from the collapsed side possible in 10 s Yes
Amount of control range between turn and stall or spin More than 50 % of the symmetric control travel

16 Trim speed spin tendency **A**

Spin occurs No

17 Low speed spin tendency **A**

Spin occurs No

18 Recovery from a developed spin **A**

Spin rotation angle after release Stops spinning in less than 90°
Cascade occurs No

19 B-line stall **B**

Change of course before release Changing course less than 45°
Behaviour before release Remains stable with straight span
Recovery Spontaneous in 3 s to 5 s
Dive forward angle on exit Dive forward 0° to 30°
Cascade occurs No

20 Big ears **A**

Entry procedure Dedicated controls
Behaviour during big ears Stable flight
Recovery Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°

21 Big ears in accelerated flight **A**

Entry procedure	Dedicated controls
Behaviour during big ears	Stable flight
Recovery	Spontaneous in less than 3 s
Dive forward angle on exit	Dive forward 0° to 30°
Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight

22 Behaviour exiting a steep spiral	A
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Tendency to return to straight flight	Spontaneous exit
Turn angle to recover normal flight	Less than 720°, spontaneous recovery
Sink rate when evaluating spiral stability [m/s]	14

23 Alternative means of directional control	A
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180° turn achievable in 20 s	Yes
Stall or spin occurs	No

24 Any other flight procedure and/or configuration described in the user's manual	
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No other flight procedure or configuration described in the user's manual