

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

Manufacturer	<b>Apco Aviation Ltd.</b>	Certification number	PG_1094.2016
Address	7, Chalamish St., Industrial park 38900 Caesarea Israel	Date of flight test	04. 02. 2016
Glider model	<b>Karisma M</b>	<b>Classification</b>	<b>A</b>
Serial number	1215-2523-06	Representative	None
Trimmer	no	Place of test	Villeneuve
Folding lines used	no		
<b>Test pilot</b>		Thurnheer Claude	Zoller Alain
<b>Harness</b>		Supair - Altiplume M	Supair - Access M
<b>Harness to risers distance (cm)</b>		43	43
<b>Distance between risers (cm)</b>		44	46
<b>Total weight in flight (kg)</b>		80	100

<b>1. Inflation/Take-off</b>	<b>A</b>			
Rising behaviour	Smooth, easy and constant rising	A	Smooth, easy and constant rising	A
Special take off technique required	No	A	No	A
<b>2. Landing</b>	<b>A</b>			
Special landing technique required	No	A	No	A
<b>3. Speed in straight flight</b>	<b>A</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	Less than 25 km/h	A	Less than 25 km/h	A
<b>4. Control movement</b>	<b>A</b>			
<b>Max. weight in flight up to 80 kg</b>				
Symmetric control pressure / travel	not available	0	not available	0
<b>Max. weight in flight 80 kg to 100 kg</b>				
Symmetric control pressure / travel	Increasing / greater than 60 cm	A	Increasing / greater than 60 cm	A
<b>Max. weight in flight greater than 100 kg</b>				
Symmetric control pressure / travel	not available	0	not available	0
<b>5. Pitch stability exiting accelerated flight</b>	<b>A</b>			
Dive forward angle on exit	Dive forward less than 30°	A	Dive forward less than 30°	A
Collapse occurs	No	A	No	A
<b>6. Pitch stability operating controls during accelerated flight</b>	<b>A</b>			
Collapse occurs	No	A	No	A
<b>7. Roll stability and damping</b>	<b>A</b>			
Oscillations	Reducing	A	Reducing	A
<b>8. Stability in gentle spirals</b>	<b>A</b>			
Tendency to return to straight flight	Spontaneous exit	A	Spontaneous exit	A
<b>9. Behaviour exiting a fully developed spiral dive</b>	<b>A</b>			
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
<b>10. Symmetric front collapse</b>	<b>A</b>			
<b>Approximately 30 % chord</b>				
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	Dive forward 0° to 30° Keeping course	A	Dive forward 0° to 30° Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
<b>At least 50% chord</b>				
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	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
<b>With accelerator</b>				
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	Dive forward 0° to 30° / Keeping course	A	Dive forward 0° to 30° / Keeping course	A
Cascade occurs	No	A	No	A
Folding lines used	No		No	
<b>11. Exiting deep stall (parachutal stall)</b>	<b>A</b>			
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
<b>12. High angle of attack recovery</b>	<b>A</b>			
Recovery	Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
Cascade occurs	No	A	No	A
<b>13. Recovery from a developed full stall</b>	<b>A</b>			
Dive forward angle on exit	Dive forward 0° to 30°	A	Dive forward 0° to 30°	A
Collapse	No collapse	A	No collapse	A
Cascade occurs (other than collapses)	No	A	No	A
Rocking back	Less than 45°	A	Less than 45°	A
Line tension	Most lines tight	A	Most lines tight	A
<b>14. Asymmetric collapse</b>	<b>A</b>			
<b>Small asymmetric collapse</b>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	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	
<b>Large asymmetric collapse</b>				
Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	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	

**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 0° to 15°	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 with fully activated accelerator**

Change of course until re-inflation / Maximum dive forward or roll angle	Less than 90° / Dive or roll angle 0° to 15°	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	

**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
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**17. Low speed spin tendency**

Spin occurs	No	A	No	A
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**18. Recovery from a developed spin**

Spin rotation angle after release	Stops spinning in less than 90°	A	Stops spinning in less than 90°	A
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	Stable flight	A	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	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

Behaviour immediately after releasing the accelerator while maintaining big ears	Stable flight	A	Stable flight	A
<b>22. Alternative means of directional control</b>	<b>A</b>			
180° turn achievable in 20 s	Yes	A	Yes	A
Stall or spin occurs	No	A	No	A
<b>23. Any other flight procedure and/or configuration described in the user's manual</b>	<b>0</b>			
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
<b>24. Comments of test pilot</b>	<input type="checkbox"/>			
Comments				

## Paraglider inspection certificate

Inspection certificate number: **PG\_1094.2016**

### Manufacturer data


Manufacturer name: **Apco Aviation Ltd**  
 Representative: **Adam Wechsler**  
 Street: **7, Chalamish St. Industrial park**  
 Post code / place: **3088900 Caesarea**  
 Country: **Israel**

### Sample data

Name:	<b>Karisma</b>	Size:	<b>M</b>
Min weight in flight [kg]:	<b>80</b>	Max weight in flight [kg]:	<b>100</b>
Weight [kg]:	<b>5.1</b>	Number of seat:	<b>Single-seater</b>
Sample load serial number:	<b>n/a</b>	Date of reception:	<b>n/a</b>
Sample flight serial number :	<b>1215-2523-06</b>	Date of reception:	<b>09.01.2016</b>

Test report summary	Result	Place	Date of test
71.8.3   Shock loading test:	<b>Test done on size L, inspection PG_1095.2016</b>		<b>08.04.2017</b>
71.8.3   Sustained loading test:	<b>Test done on size L, inspection PG_1095.2016</b>		<b>08.04.2017</b>
71.8.2   Flight test:	<b>A</b>	Villeneuve	<b>04.02.2016</b>
71.4.3   Measurement:	<b>POSITIVE</b>	Villeneuve	<b>02.05.2016</b>
71.6.3   Line bending test:	<b>POSITIVE</b>	Villeneuve	<b>13.02.2018</b>

### Issue data

Place of declaration: **Villeneuve**  
 Date of issue: **20.02.2018**  
 Managing Director: **Alain Zoller**  
 Signature: 

This signature approve the validity of the test reports 71.8.2, 71.8.3, 71.4.3 and 71.6.3 (Only if test report are applicable).

Air Turquoise SA has thoroughly tested the sample of paraglider mentioned above and certifies its conformity with the following standards : EN 926-2:2013 / EN 926-1:2015

This inspection certificate confirms that the above sample identified by its serial number and only this is in conforms with the standards.

The inspection certificate contain the following test and is complete with the test report number: 71.8.2, 71.8.3, 71.4.3, 71.6.3  
(If the 71.8.3 tests are not done, it has been done for another size of a sample within the definition of same model)

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Test laboratory for paragliders, paraglider harnesses  
and paraglider reserve parachutes



**APCO Aviation Ltd.** 

Class: **A**

In accordance with standards  
EN 926-2:2013, EN 926-1:2015

PG\_1094.2016

Date of issue (DMY):

20. 02. 2018

Manufacturer: **Apco Aviation Ltd.**

Model: **Karisma M**

Serial number: **1215-2523-06**

**Configuration during flight tests**

**Paraglider**

Maximum weight in flight (kg)	<b>100</b>
Minimum weight in flight (kg)	<b>80</b>
Glider's weight (kg)	<b>5.1</b>
Number of risers	<b>3</b>
Projected area (m2)	<b>22.7</b>

**Accessories**

Range of speed system (cm)	<b>12.5</b>
Speed range using brakes (km/h)	<b>15</b>
Range of trimmers (cm)	<b>0</b>
Total speed range with accessories (km/h)	<b>23</b>

**Harness used for testing (max weight)**

Harness type	<b>ABS</b>
Harness brand	<b>Supair</b>
Harness model	<b>Access M</b>

**Inspections (whichever happens first)**

every 12 months or every 150 flying hours  
Warning! Before use refer to user's manual  
Person or company having presented the glider for testing: **None**

Harness to risers distance (cm) **43**

Distance between risers (cm) **46**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	0	<input type="checkbox"/>