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## DHV TESTREPORT EN926-2:2014

## PHI TENOR 23

**Type designation** PHI Tenor 23  
**Type test reference no** DHV GS-01-2382-18  
**Holder of certification** [Papesh GmbH](#)  
**Manufacturer** [Papesh GmbH](#)  
**Classification** B  
**Winch towing** Yes  
**Number of seats min / max** 1 / 1  
**Accelerator** Yes  
**Trimmers** No



## BEHAVIOUR AT MIN WEIGHT IN FLIGHT (90KG)

## Test pilots



Harald Buntz

## BEHAVIOUR AT MAX WEIGHT IN FLIGHT (110KG)



Sebastian Mackrodt

Inflation/take-off

	A	A
<b>Rising behaviour</b>	Smooth, easy and constant rising	Smooth, easy and constant rising
<b>Special take off technique required</b>	No	No

Landing

	A	A
<b>Special landing technique required</b>	No	No

Speeds in straight flight

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

Control movement

	A	A
<b>Symmetric control pressure</b>	Increasing	Increasing
<b>Symmetric control travel</b>	Greater than 60 cm	Greater than 65 cm

Pitch stability exiting accelerated flight

	A	A
<b>Dive forward angle on exit</b>	Dive forward less than 30°	Dive forward less than 30°
<b>Collapse occurs</b>	No	No

Pitch stability operating controls during accelerated flight

	A	A
<b>Collapse occurs</b>	No	No

Roll stability and damping

	A	A
<b>Oscillations</b>	Reducing	Reducing

Stability in gentle spirals

	A	A
<b>Tendency to return to straight flight</b>	Spontaneous exit	Spontaneous exit

en : Verhalten beim Verlassen einer vollständigen Steilschleife

	A	A
<b>en : Erstes Ansprechen des Gleitschirms (die ersten 180°)</b>	en : unmittelbare Verringerung der Drehgeschwindigkeit	en : unmittelbare Verringerung der Drehgeschwindigkeit
<b>Tendency to return to straight flight</b>	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)
<b>Turn angle to recover normal flight</b>	Less than 720°, spontaneous recovery	Less than 720°, spontaneous recovery

Symmetric front collapse

	A	A
<b>Entry</b>	Rocking back less than 45°	Rocking back less than 45°

<b>Recovery</b> Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°	
<b>Change of course</b> Keeping course		Keeping course	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>en : Symmetrischer Frontklapper mindestens 50% Flügeltiefe</b>			
<b>Entry</b> Rocking back less than 45°		Rocking back less than 45°	
<b>Recovery</b> Spontaneous in less than 3 s		Spontaneous in less than 3 s	
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°	
<b>Change of course</b> Keeping course		Keeping course	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>en : Symmetrischer Frontklapper im beschleunigten Flug mindestens 50% Flügeltiefe</b>			
<b>Entry</b> Rocking back less than 45°	B	Rocking back less than 45°	B
<b>Recovery</b> Spontaneous in 3 s to 5 s		Spontaneous in 3 s to 5 s	
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°	
<b>Change of course</b> Keeping course		Entering a turn of less than 90°	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>Exiting deep stall (parachutal stall)</b>			
<b>Deep stall achieved</b> Yes	A	Yes	A
<b>Recovery</b> Spontaneous in less than 3 s		Spontaneous in less than 3 s	
<b>Dive forward angle on exit</b> Dive forward 0° to 30°		Dive forward 0° to 30°	
<b>Change of course</b> Changing course less than 45°		Changing course less than 45°	
<b>Cascade occurs</b> No		No	
<b>High angle of attack recovery</b>			
<b>Recovery</b> Spontaneous in less than 3 s	A	Spontaneous in less than 3 s	A
<b>Cascade occurs</b> No		No	
<b>Recovery from a developed full stall</b>			
<b>Dive forward angle on exit</b> Dive forward 0° to 30°	A	Dive forward 30° to 60°	B
<b>Collapse</b> No collapse		No collapse	
<b>Cascade occurs (other than collapses)</b> No		No	
<b>Rocking back</b> Less than 45°		Less than 45°	
<b>Line tension</b> Most lines tight		Most lines tight	
<b>en : Kleiner einseitiger Klapper</b>			
<b>Change of course until re-inflation</b> Less than 90°	A	Less than 90°	A
<b>Maximum dive forward or roll angle</b> Dive or roll angle 0° to 15°		Dive or roll angle 15° to 45°	
<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation	
<b>Total change of course</b> Less than 360°		Less than 360°	
<b>Collapse on the opposite side occurs</b> en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)		en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	
<b>Twist occurs</b> No		No	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>en : Großer einseitiger Klapper</b>			
<b>Change of course until re-inflation</b> Less than 90°	A	Less than 90°	A
<b>Maximum dive forward or roll angle</b> Dive or roll angle 15° to 45°		Dive or roll angle 15° to 45°	
<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation	
<b>Total change of course</b> Less than 360°		Less than 360°	
<b>Collapse on the opposite side occurs</b> en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)		en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	
<b>Twist occurs</b> No		No	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>en : Kleiner einseitiger Klapper im beschleunigten Flug</b>			
<b>Change of course until re-inflation</b> Less than 90°	A	Less than 90°	A
<b>Maximum dive forward or roll angle</b> Dive or roll angle 15° to 45°		Dive or roll angle 15° to 45°	
<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation	
<b>Total change of course</b> Less than 360°		Less than 360°	
<b>Collapse on the opposite side occurs</b> en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)		en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)	
<b>Twist occurs</b> No		No	
<b>Cascade occurs</b> No		No	
<b>en : Faltleinen wurden benutzt</b> no		no	
<b>en : Großer einseitiger Klapper im beschleunigten Flug</b>			
<b>Change of course until re-inflation</b> 90° to 180°	B	90° to 180°	B
<b>Maximum dive forward or roll angle</b> Dive or roll angle 15° to 45°		Dive or roll angle 15° to 45°	
<b>Re-inflation behaviour</b> Spontaneous re-inflation		Spontaneous re-inflation	
<b>Total change of course</b> Less than 360°		Less than 360°	

**Collapse on the opposite side occurs** en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)

en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)

**Twist occurs** No

No

**Cascade occurs** No

No

en : Faltleinen wurden benutzt no

no

**Directional control with a maintained asymmetric collapse**

A

A

**Able to keep course** Yes

Yes

**180° turn away from the collapsed side possible in 10 s** Yes

Yes

**Amount of control range between turn and stall or spin** More than 50 % of the symmetric control travel

More than 50 % of the symmetric control travel

**Trim speed spin tendency**

A

A

**Spin occurs** No

No

**Low speed spin tendency**

A

A

**Spin occurs** No

No

**Recovery from a developed spin**

B

A

**Spin rotation angle after release** Stops spinning in 90° to 180°

Stops spinning in less than 90°

**Cascade occurs** No

No

**B-line stall**

A

A

**Change of course before release** Changing course less than 45°

Changing course less than 45°

**Behaviour before release** Remains stable with straight span

Remains stable with straight span

**Recovery** Spontaneous in less than 3 s

Spontaneous in less than 3 s

**Dive forward angle on exit** Dive forward 0° to 30°

Dive forward 0° to 30°

**Cascade occurs** No

No

**Big ears**

B

B

**Entry procedure** Dedicated controls

Dedicated controls

**Behaviour during big ears** Stable flight

Stable flight

**Recovery** Spontaneous in 3 s to 5 s

Spontaneous in 3 s to 5 s

**Dive forward angle on exit** Dive forward 0° to 30°

Dive forward 0° to 30°

**Big ears in accelerated flight**

A

A

**Entry procedure** Dedicated controls

Dedicated controls

**Behaviour during big ears** Stable flight

Stable flight

**Recovery** Spontaneous in 3 s to 5 s

Spontaneous in 3 s to 5 s

**Dive forward angle on exit** Dive forward 0° to 30°

Dive forward 0° to 30°

**Behaviour immediately after releasing the accelerator while maintaining big ears** Stable flight

Stable flight

**Alternative means of directional control**

A

A

**180° turn achievable in 20 s** Yes

Yes

**Stall or spin occurs** No

No

**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