

DHV TESTREPORT EN926-2:2014

MAC PARA ELAN 2 30

Type designation	Mac Para Elan 2 30
Type test reference no	DHV GS-01-2289-17
Holder of certification	MAC Para Technology
Manufacturer	MAC Para Technology
Classification	C
Winch towing	Yes
Number of seats min / max	1 / 1
Accelerator	Yes
Trimmers	No



BEHAVIOUR AT MIN WEIGHT IN FLIGHT (105KG)

BEHAVIOUR AT MAX WEIGHT IN FLIGHT (130KG)

Test pilots



Harald Buntz



Sebastian Mackrodt

Inflation/take-off

A

A

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

Smooth, easy and constant rising
 No

Landing

A

A

Special landing technique required No

No

Speeds in straight flight

A

A

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

Yes
 Yes

Minimum speed Less than 25 km/h

Less than 25 km/h

Control movement

C

A

Symmetric control pressure Increasing
Symmetric control travel 50 cm to 65 cm

Increasing
 Greater than 65 cm

Pitch stability exiting accelerated flight

A

A

Dive forward angle on exit Dive forward less than 30°
Collapse occurs No

Dive forward less than 30°
 No

Pitch stability operating controls during accelerated flight

A

A

Collapse occurs No

No

Roll stability and damping

A

A

Oscillations Reducing

Reducing

Stability in gentle spirals

A

A

Tendency to return to straight flight Spontaneous exit

Spontaneous exit

en : Verhalten beim Verlassen einer vollständigen Steilspirale

A

A

en : Erstes Ansprechen des Gleitschirms (die ersten 180°) en : unmittelbare Verringerung der Drehgeschwindigkeit

en : unmittelbare Verringerung der Drehgeschwindigkeit

Tendency to return to straight flight	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)	en : selbstständiges Ausleiten (G-Kraft abnehmend, Drehgeschwindigkeit abnehmend)
Turn angle to recover normal flight	Less than 720°, spontaneous recovery	Less than 720°, spontaneous recovery

Symmetric front collapse	B	B
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in less than 3 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 0° to 30°
Change of course	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no

en : Symmetrischer Frontklapper mindestens 50% Flügeltiefe	B	B
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 0° to 30°
Change of course	Entering a turn of less than 90°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no

en : Symmetrischer Frontklapper im beschleunigten Flug	C	B
Entry	Rocking back less than 45°	Rocking back less than 45°
Recovery	Spontaneous in 3 s to 5 s	Spontaneous in 3 s to 5 s
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 30° to 60°
Change of course	Entering a turn of 90° to 180°	Entering a turn of less than 90°
Cascade occurs	No	No
en : Faltleinen wurden benutzt	no	no

Exiting deep stall (parachutal stall)	A	B
Deep stall achieved	Yes	Yes
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 30° to 60°
Change of course	Changing course less than 45°	Changing course less than 45°
Cascade occurs	No	No

High angle of attack recovery	A	A
Recovery	Spontaneous in less than 3 s	Spontaneous in less than 3 s
Cascade occurs	No	No

Recovery from a developed full stall	B	C
Dive forward angle on exit	Dive forward 30° to 60°	Dive forward 60° to 90°
Collapse	No collapse	No collapse
Cascade occurs (other than collapses)	No	No
Rocking back	Less than 45°	Less than 45°
Line tension	Most lines tight	Most lines tight

en : Kleiner einseitiger Klapper	A	B
Change of course until re-inflation	Less than 90°	90° to 180°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 15° to 45°
Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	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

en : Großer einseitiger Klapper	C	C
Change of course until re-inflation	180° to 360°	180° to 360°
Maximum dive forward or roll angle	Dive or roll angle 15° to 45°	Dive or roll angle 45° to 60°
Re-inflation behaviour	Spontaneous re-inflation	Spontaneous re-inflation
Total change of course	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

en : Kleiner einseitiger Klapper im beschleunigten Flug

B

B

Change of course until re-inflation 90° to 180°
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 en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs No
Cascade occurs No
en : Faltleinen wurden benutzt no

90° to 180°
Dive or roll angle 15° to 45°
Spontaneous re-inflation
Less than 360°
en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
No
No
no

en : Großer einseitiger Klapper im beschleunigten Flug

C

C

Change of course until re-inflation 180° to 360°
Maximum dive forward or roll angle Dive or roll angle 45° to 60°
Re-inflation behaviour Spontaneous re-inflation
Total change of course Less than 360°
Collapse on the opposite side occurs en : Nein (oder nur eine kleine Anzahl von eingeklappten Zellen mit selbstständiger Wiederöffnung)
Twist occurs No
Cascade occurs No
en : Faltleinen wurden benutzt no

180° to 360°
Dive or roll angle 45° to 60°
Spontaneous re-inflation
Less than 360°
Yes, no turn reversal
No
No
no

Directional control with a maintained asymmetric collapse

A

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

Yes
Yes
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

A

A

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

Stops spinning in less than 90°
No

B-line stall

C

C

Change of course before release Changing course less than 45°
Behaviour before release Remains stable without straight span
Recovery Spontaneous in less than 3 s
Dive forward angle on exit Dive forward 0° to 30°
Cascade occurs No

Changing course less than 45°
Remains stable without straight span
Spontaneous in less than 3 s
Dive forward 0° to 30°
No

Big ears

B

B

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

Dedicated controls
Stable flight
Recovery through pilot action in less than a further 3 s
Dive forward 0° to 30°

Big ears in accelerated flight

B

A

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

Dedicated controls
Stable flight
Spontaneous in 3 s to 5 s
Dive forward 0° to 30°
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