

MAC PARA ARAVIS 19

Type designation Mac Para Aravis 19 Type test reference no DHV GS-01-2664-21

Holder of certification MAC Para Technology

Manufacturer MAC Para Technology

Classification A

Winch towing Yes

Number of seats min / max 1/1

Accelerator Yes

Trimmers No



BEHAVIOUR AT MIN WEIGHT IN FLIGHT (55KG)

Test pilots

BEHAVIOUR AT MAX WEIGHT IN FLIGHT (80KG)



Juliette Schönsee

Josef Bauer

Expert Beni Stocker

| | No release | No release | |
|---------------------|---|----------------------------------|--|
| Inflation/take-off | A | Α | |
| | Rising behaviour Smooth, easy and constant rising | Smooth, easy and constant rising | |
| Special take off te | chnique required No | No | |
| | | | |

| | <u>Landing</u> | ¦A | A |
|-----|----------------|----|---|
| - 1 | | | |
| | | | |

Special landing technique required No No

Speeds in straight flight

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

> Minimum speed Less than 25 km/h Less than 25 km/h

| Control movement | I A | I A |
|------------------|-----|-----|
| Control movement | IA | IA |
| | i | |

Symmetric control pressure Increasing Increasing Symmetric control travel Greater than 55 cm Greater than 60 cm

Pitch stability exiting accelerated flight

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

| Pitch stability operating controls during | | |
|---|---|----|
| accelerated flight | A | ¦Α |
| | | |

Collapse occurs No No

Roll stability and damping Α

Oscillations Reducing Reducing

Stability in gentle spirals Α

Tendency to return to straight flight Spontaneous exit Spontaneous exit

Behaviour exiting a fully developed spiral dive A

Initial response of glider (first 180°) Immediate reduction of rate of turn Immediate reduction of rate of turn Tendency to return to straight flight Spontaneous exit (g force decreasing, rate of turn decreasing)

Turn angle to recover normal flight Less than 720°, spontaneous recovery

Spontaneous exit (g force decreasing, rate of turn decreasing) Less than 720°, spontaneous recovery

Symmetric front collapse

Entry Rocking back less than 45°

Rocking back less than 45°

| | Spontaneous in less than 3 s | Spontaneous in less than 3 s |
|--|---|---|
| Dive forward angle on exit | | Dive forward 0° to 30° |
| Change or course Cascade occurs | Entering a turn of less than 90° | Keeping course No |
| Folding lines used | | no |
| Totaling lines used | | 110 |
| Unaccelerated collapse (at least 50 % chord) | A | A |
| Entra | r Rocking back less than 45° | Rocking back less than 45° |
| - | Spontaneous in less than 3 s | Spontaneous in less than 3 s |
| Dive forward angle on exit | • | Dive forward 0° to 30° |
| _ | Entering a turn of less than 90° | Keeping course |
| Cascade occurs | - | No |
| Folding lines used | l no | no |
| | | |
| Accelerated collapse (at least 50 % chord) | A | A |
| Entry | Rocking back less than 45° | Rocking back less than 45° |
| 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° |
| Change of course | Entering a turn of less than 90° | Keeping course |
| Cascade occurs | | No |
| Folding lines used | l no | no |
| Eviting doop stall (namehotal stall) | A | A |
| Exiting deep stall (parachutal stall) | ± | i |
| Deep stall achieved | | Yes |
| | Spontaneous in less than 3 s | Spontaneous in less than 3 s |
| Dive forward angle on exit | | Dive forward 0° to 30° |
| Change of course Cascade occurs | Changing course less than 45° | Changing course less than 45° |
| Cascade occurs | S INO | No |
| High angle of attack recovery | A | A |
| | 4 | ± |
| Recovery Cascade occurs | r Spontaneous in less than 3 s | Spontaneous in less than 3 s |
| Cascade occurs | 3 NO | No |
| Recovery from a developed full stall | A | Α |
| Dive forward angle on exit | Dive forward 00 to 200 | Diver forward 00 to 200 |
| | | |
| | | Dive forward 0° to 30° No collapse |
| Collapse | No collapse | No collapse |
| Collapse Cascade occurs (other than collapses) | No collapse | |
| Collapse Cascade occurs (other than collapses) Rocking back | No collapse No | No collapse No |
| Collapse Cascade occurs (other than collapses) Rocking back | No collapse No Less than 45° | No collapse No Less than 45° |
| Collapse Cascade occurs (other than collapses) Rocking back | No collapse No Less than 45° | No collapse No Less than 45° |
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| Cascade occurs | No | No |
|---|--|---|
| Folding lines used | no | no |
| | | |
| Large asymmetric collapse accelerated | A | Α |
| Change of course until re-inflation | Less than 90° | Less than 90° |
| 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° |
| Collapse on the opposite side occurs | No (or only a small number of collapsed cells with a spontaneous re inflation) | No (or only a small number of collapsed cells with a spontaneous re inflation) |
| Twist occurs | No | No |
| Cascade occurs | No | No |
| Folding lines used | no | no |
| Directional control with a maintained asymmetric collapse | А | А |
| Able to keep course | Yes | Yes |
| 180° turn away from the collapsed side possible in | | Yes |
| 10 s | | |
| Amount of control range between turn and stall or | More than 50 % of the symmetric control travel | More than 50 % of the symmetric control travel |
| spin | uavel | CONTROL Havel |
| Trim speed spin tendency | A | A |
| | i | <u> </u> |
| Spin occurs | No | No |
| Low speed spin tendency | A | Α |
| Spin occurs | No | No |
| Recovery from a developed spin | A | Α |
| Spin rotation angle after release | Stops spinning in less than 90° | Stops spinning in less than 90° |
| Cascade occurs | | No |
| | | |
| B-line stall | A | Α |
| Change of course before release | Changing course less than 45° | Changing course less than 45° |
| | 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 |
| | | |
| <u>Big ears</u> | A | A |
| Entry procedure | Dedicated controls | Standard technique |
| Behaviour during big ears | Stable flight | Stable flight |
| 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° |
| Big ears in accelerated flight | Dive forward 0° to 30° | Dive forward 0° to 30° |
| | A | A |
| Entry procedure | A Dedicated controls | A Standard technique |
| Entry procedure Behaviour during big ears | A Dedicated controls | A |
| Entry procedure Behaviour during big ears | Dedicated controls Stable flight Spontaneous in less than 3 s | Standard technique Stable flight |
| Entry procedure Behaviour during big ears Recovery | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° | Standard technique Stable flight Spontaneous in less than 3 s |
| Entry procedure Behaviour during big ears Recovery Dive forward angle on exit | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight | Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° |
| Entry procedure Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight | Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° |
| Entry procedure Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight | Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight |
| Entry procedure Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight A Yes | Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight |
| Entry procedure Behaviour during big ears Recovery Dive forward angle on exit Behaviour immediately after releasing the accelerator while maintaining big ears Alternative means of directional control 180° turn achievable in 20 s | Dedicated controls Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight A Yes No | Standard technique Stable flight Spontaneous in less than 3 s Dive forward 0° to 30° Stable flight A Yes |

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