FTR - Flight Test Report

| Manufacturer | 3 | Type testing No. | EAPR-GS-0566/16 | |
|--------------|---------------------------------------|------------------|-----------------|--|
| | Hochriess traße 1 D-83126 Flints bach | serial number | | |
| Model | Gravis M | Laurtin | Schruns | |
| Comment | | Location | Schruns | |



Rev. 2.3 - 26.11.2014 EAPR GmbH - Marktstr. 11 D-87730 Bad Grönenbach - Germany

| Date of testing | 28.10.2016 | Minimum take off weight 80 kg | | | Maximum take off weight 105 kg | | | |
|------------------------|------------|----------------------------------|------|---|-----------------------------------|------|--|--|
| Testpilot | | Hannes Tschofen | | 1 | Pascal Purin | | | |
| Harness | | EAPR-Equipment | | 5 | EAPR-Equipment | | | |
| Pilot's take off weigh | it | 80 | kg 💋 | | 105 | kg 😺 | | |





| Test-criteria | | Minimum take off weight | Evaluation | Maximum take off weight | Evaluatio | |
|--|-------------------|-------------------------------------|--------------------------------|-------------------------------------|--------------------------------|---|
| 1. Inflation / take-off - 4.4.1 | | | | | | |
| sing behavior | | no pilot correction required | А | no pilot correction required | А | |
| Special take off technique required | | No | Α | No | А | |
| 2. Landing - 4.4.2 | | 1.0 | 7. | 110 | , , | |
| Special landing technique required | | No | A | No | A | |
| 3. Speeds in straight flight - 4.4.3 | | 140 | A | 140 | A | |
| | | Ly | | V. | | |
| Trim speed more than 30km/h | | Yes | Α | Yes | Α | |
| Speed range using the controls larger than 10km/h | | Yes | Α | Yes | Α | |
| Minimum speed | | Less than 25 km/h | Α | Less than 25 km/h | Α | |
| 4. Control movement - 4.4.4 | | | | | | |
| Max. weight in flight up to 80kg | | | - | | - | |
| Max. weight in flight 80 to 100kg | | - | | | - | |
| Max. weight in flight greater than 100kg | | Increasing >65 cm | А | Increasing >65 cm | А | |
| 5. Pitch stability exiting accelerated flight - 4.4. | .5 | | | | | |
| Dive forward angle on exit | | Dive forward less than 30° | А | Dive forward less than 30° | А | |
| Collapse occurs | | No | A | No | A | |
| 6. Pitch stability operating controls during acce | elerated t | flight - 4.4.6 | | | | |
| Collapse occurs | | No | Α | No | A | |
| 7. Roll stability and damping - 4.4.7 | | | , | | , | |
| Oscillations | | Reducing | Α | Reducing | A | |
| 8. Stability in gentle spirals - 4.4.8 | | | , ,, | | , , | |
| Tendency to return to straight flight | | Spontaneous exit | A | Spontaneous exit | l A | |
| 9. Behaviour exiting a fully developed spiral div | 10 111 | | А | ороналеова ели | | |
| Initial response of glider (first 180°) | ve - 4.4. | No immediate reaction | В | No immediate reaction | В | |
| Tendency to return to straight flight | | Spontaneous exit | A | Spontaneous exit | A | |
| Turn angle to recover normal flight | | 720° to 1080°, spontaneous recovery | B | 720° to 1080°, spontaneous recovery | В | |
| 10. Symmetric front collapse - 4.4.10 | | 720 to 1000 , openianous footory | l D | 720 to 1000 ; openianous receivery | | |
| Folding lines used | | l No | | No | 1 | |
| Entry | .0 | Rocking back less than 45° | Α | Rocking back less than 45° | А | |
| Recovery | ~ 30% | Spontaneous in less than 3 sec | A | Spontaneous in less than 3 sec | A | |
| Dive forward angle on exit | trim speed | 0° - 30° Keeping course | A | 0° - 30° Keeping course | Α | |
| Cascade occurs | trim | No Reeping course | A | No Reeping course | A | |
| Entry | 8 | Rocking back less than 45° | A | Rocking back less than 45° | Ä | |
| Recovery | %0< > po | Spontaneous in less than 3 sec | A | Spontaneous in less than 3 sec | A | |
| Dive forward angle on exit | paads | 0° - 30° Keeping course | Α | 0° - 30° Keeping course | Α | |
| Cascade occurs | trim | No | A | No | A | |
| Entry | %0 | Rocking back less than 45° | A | Rocking back less than 45° | A | |
| Recovery | accelerated > 50% | ited > 50 | Spontaneous in less than 3 sec | А | Spontaneous in less than 3 sec | А |
| Dive forward angle on exit | celera | 0° - 30° Keeping course | Α | 0° - 30° Keeping course | Α | |
| Cascade occurs | acc | No | Α | No | Α | |
| 11. Exiting deep stall (parachutal stall) - 4.4.11 | | | | | | |
| Deep stall achieved | | Yes | | Yes | | |
| Recovery | ery | | А | Spontaneous in less than 3 sec | А | |
| Dive forward angle on exit | | 0° - 30° | A 0° - 30° | | Α | |
| Change of course | | Changing course less than 45° | A | Changing course less than 45° | A | |
| Cascade occurs | | No | Α | No . | | |

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| A | 12. High angle of attack recovery - 4.4.12 | | | | | | | | | |
|--|---|----------------|-----------------------------------|---------------------|----------------|---------------------------|---------------------------------|--|----------------|----|
| 13. Processory from an developed in stall - 4.4.13 | Recovery | Spontaneous in | less than 3 sec | | Α | Spontaneous in | less than 3 sec | | Α | |
| Second content | • | | No | | | А | No | | | Α |
| Calegor Cale | | | | | | - | | | | |
| Calcade cours growth bancologies No. Loss francés Loss fra | Dive forward angle on exit | | | | | | | | | |
| Recompanies | | | | | | | | | | |
| 14. Approved colors certific included to colors certified included to the colors of | | | | | | | | | | |
| Processing season | | | Most lines tight | | | | Most lines tight | | | Α |
| Compared for contract of the circle in contract of the contr | | | | | | | | | | |
| Re-initiation betwork Trail of longer of course Confidence on the replaced on extension Confidence on the replaced on state Confidence on the replaced on the replaced on state Confidence on the replaced on the | | 1 | | T . | 1 | | | T . | 1 | |
| No | Change of course until re-inflation | Se | < 90° | Dive or roll angle | 0° - 15° | Α | < 90° | Dive or roll angle | 0° - 15° | Α |
| No | Re-inflation behavior | sed, sollar | Spontaneous re | -inflation | | Α | Spontaneous re | -inflation | | Α |
| No | Total change of course | o %0 | No No | | А | Less than 360° | Α | | | |
| No | | ax 5 | | | | | | | | |
| Charge of course utilit re-infalson 1988 200° 100 montaining 150 - 450° A 200° 100 montaining 250 - 450° A 200° 150 montaining 250 - 450° A 200° 150 montaining 250 - 450° A 250° 250 montaining 250 - 450° A 250° | | Ε | | | | | | | | |
| Sportaneous re-inflation Sportaneous re-inflation A Sp | | | | Dive or roll angle | 15° - 45° | | | Dive or roll angle | 15° - 45° | |
| Classed coorse Total Principle Total Princ | Orlange of course until re-limation | apse | 2 90 | Dive of foil angle | 15 - 45 | Α | V 90 | Dive of foil aligie | 15 - 45 | ^ |
| Classed coorse Total Principle Total Princ | Re-inflation behavior | colla | Spontaneous re | -inflation | | Α | Spontaneous re | -inflation | | Α |
| Classed coorse Total Principle Total Princ | | m sp 75% | Less than 360° | | | | | | | |
| Classed coorse Total Principle Total Princ | | nax.i | | | | | | | | |
| Re-inflation behavior | | _ | | | | | | | | |
| Re-inflation behavior | | | | | 480 | | ı | | 460 | |
| No | Change of course until re-inflation | esc | < 90° | Dive or roll angle | 15° - 45° | А | < 90° | Dive or roll angle | 15° - 45° | А |
| No | Re-inflation behavior | ated, | Spontaneous re | -inflation | | A | Spontaneous re | -inflation | | A |
| No | Total change of course | elera 0% c | Less than 360° | | | Α | Less than 360° | | | Α |
| No | | acc ax 5 | | | | Α | | | | |
| Service of course until re-inflation | | Ε | | | | | | | | |
| Part | | | | Disco or roll angle | 150 - 450 | | | Divo or roll angle | 150 - 450 | |
| No | Change of course until re-illiation | - bse | 90 - 180 | Dive or roll angle | 15 - 45 | В | 90 - 180 | Dive or roll angle | 15 - 45 | Ь |
| No | Re-inflation behavior | atec | Spontaneous re | -inflation | | Α | Spontaneous re | -inflation | | Α |
| No | Total change of course | celeı 75% | Less than 360° No | | | | | | | |
| No | | ac nax ī | | | | | | | | |
| Alle to keep course straight Yes A Yes A Yes A Yes A A Yes A No A Yes A A Yes A No A N | | _ | | | | | | | | |
| 180° turn away from the collapsed side possible in 10 sec Yes A Yes A Arount of control trange between turn and stall or spin More than 50% of the symmetric control travel A More than 50% of the symmetric control travel A No | 15. Directional control with a maintained asymmetry | metric col | lapse - 4.4.15 | | | | | | | |
| ### Anount of control range between turn and stall or spin 16. Trim speed spin tendency - 4.4.16 | Able to keep course straight | | Yes | | | Α | Yes | | | Α |
| 16. Trim speed spin tendency - 4.4.16 Spin occurs No | 180° turn away from the collapsed side possible in | 10 sec | Yes | | Α | Yes | | | Α | |
| 16. Trim speed spin tendency - 4.4.16 Spin occurs No | Amount of control range between turn and stall or | enin | More than 50% | of the symmetric | control traval | ^ | More than 50% | More than E00/ of the symmetric central travel | | |
| Spin occurs No A No | <u>-</u> | spiii | Wore than 50 % | or the symmetric | Control traver | А | Wore triair 50 % | or the symmetric i | control traver | А |
| 17. Low speed spin tendency - 4.4.17 Spin occurs No A No No A | | | T.N. | | | | I Ni | | | |
| Spin occurs No A No A No A No A 18. Recovery from a developed spin - 4.4.18 | • | | INO | | | А | I No | | | А |
| Spring Stops spinning in less than 90° A Cascade occurs No | | | l No | | | А | No | | | А |
| Cascade occurs No A No A No A 19. Bine-stall - 4.4.19 Change of course before release Changing course less than 45° A Changing course less than 45° A Remains stable with straight span A Remains stable with straight span A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Dive forward angle on exit 0°-30° A No A No A Behaviour during big ears - 4.4.20 Entry procedure Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Behaviour during big ears Stable liight A Stable liight A Spontaneous in less than 3 sec A Dive forward angle on exit 0°-30° A Spontaneous in less than 3 sec A Spontaneous in 3 to 5 sec A Spontaneous in 3 to | | | | | | | | | | |
| Cascade occurs No A No A No A 19. Bine-stall - 4.4.19 Change of course before release Changing course less than 45° A Changing course less than 45° A Remains stable with straight span A Remains stable with straight span A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Dive forward angle on exit 0°-30° A No A No A Behaviour during big ears - 4.4.20 Entry procedure Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Behaviour during big ears Stable liight A Stable liight A Spontaneous in less than 3 sec A Dive forward angle on exit 0°-30° A Spontaneous in less than 3 sec A Spontaneous in 3 to 5 sec A Spontaneous in 3 to | Spin rotation angle after release | | Stops spinning in less than 90° | | | Δ | Stops spinning in less than 90° | | | Δ |
| 19. B-line-stall - 4.4.19 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 sec A Spontaneous in less than 3 sec A Dive forward angle on exit 0°-30° A 0°-30° A Recovery No A No A No A Recovery Special device required A Special device required A Special device required A Special device required A Spontaneous in less than 3 sec A Dive forward angle on exit C 30°-30° A No A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Behaviour during big ears Stable flight A Stable flight A Spontaneous in less than 3 sec A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Behaviour during big ears Stable flight A Stable flight A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Behaviour during big ears Stable flight A Stable flight A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Dive forward angle on exit A Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Recovery Spontaneous in 3 to 5 sec A Spontaneou | | | · · · · | | | | 1 1 1 1 | | | |
| Changing course less than 45° A Changing course less than 45° A Changing course less than 45° A Behaviour before release Remains stable with straight span A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A No A N | | | NO | | | A | 140 | | | |
| Behaviour before release Remains stable with straight span A Remains stable with straight span A Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Dive forward angle on exit O*-30° A No A No A No A A No A A A No A A A A A A A A A | | | Changing course less than 45° | | | А | Changing course less than 45° | | | А |
| Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A Dive forward angle on exit 0° - 30° A No A 20. Big ears - 4.4.20 Entry procedure Special device required A Special device required A Behaviour during big ears Stable flight A Recovery Spontaneous in less than 3 sec A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Spontaneous in less than 3 sec A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Spontaneous in less than 3 sec A 22. Spontaneous in less than 3 sec A 23. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A 24. Spontaneous in 30° Special device required A 25. Spontaneous in 30° Special device required A 26. Spontaneous in 30° Special device required A 27. Special device required A 28. Spontaneous in 30° Special device required A 29. Stable flight A 20. Stable f | | | | | | | | 1 | | |
| Dive forward angle on exit O° - 30° A 0° - 30° A No A No 20. Big ears - 4.4.20 Entry procedure Special device required Special device required A Special device required A Special device required A Spontaneous in less than 3 sec A Spontaneous in 3 to 5 sec Behaviour during big ears Stable flight A | | | nemains stable with straight span | | | | | | | |
| Cascade occurs No A No | Recovery | | Spontaneous in less than 3 sec | | Α | | | | Α | |
| 20. Big ears - 4.4.20 Entry procedure Special device required A Special device required A Secondary Diversifies the special device of the special device | | | | | | | | | | |
| Entry procedure Special device required A Special device required A Stable flight A Stable flight A Stable flight A Spontaneous in less than 3 sec A Stable flight A Stable flight A Spontaneous in 3 to 5 sec A Stable flight A | | | 140 | | | А | 140 | | | А |
| Behaviour during big ears Stable flight A Stable flight A Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A O° bis 30° A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Spontaneous in 3 to 5 sec A Stable flight A Stable fligh | | | 0 | | | | | | | |
| Recovery Spontaneous in less than 3 sec A Spontaneous in less than 3 sec A 0° bis 30° A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Stable flight A Stable flight A Stable flight A Spontaneous in 3 to 5 sec A Stable flight A A Stable flight A | * * | | | | | · · | | | | |
| Dive forward angle on exit 0°-30° A 0° bis 30° A 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Stable flight A Behaviour during big ears Stable flight A Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Dive forward angle on exit 0°-30° A 0° bis 30° A Behaviour immediately after releasing the accelarator while maintaining big ears Stable flight A Stable flig | Behaviour during big ears | | Stable flight | | | | | | | |
| 21. Big Ears in accelerated flight - 4.4.21 Entry procedure Special device required A Special device required A Shable flight A Stable flight A Stable flight A Spontaneous in 3 to 5 sec A Stable flight A Stable flight A Stabl | Recovery | | Spontaneous in | less than 3 sec | | Α | Spontaneous in less than 3 sec | | | Α |
| Entry procedure Special device required A Special device required A Special device required A Stable flight A Stable flight A Stable flight A Stable flight A Spontaneous in 3 to 5 sec A Stable flight A Stable f | Ÿ | | 0° - 30° | | | А | 0° bis 30° | | | А |
| Behaviour during big ears Stable flight A Stable flight A Spontaneous in 3 to 5 sec A Stable flight | 21. Big Ears in accelerated flight - 4.4.21 | | 1 | | | | 1 | | | |
| Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Dive forward angle on exit 0°-30° A 0° bis 30° A Behaviour immediately after releasing the accelerator while maintaining big ears Stable flight A Stable f | Entry procedure | | Special device required | | Α | Special device required | | | Α | |
| Recovery Spontaneous in 3 to 5 sec A Spontaneous in 3 to 5 sec A Dive forward angle on exit 0°-30° A Behaviour immediately after releasing the accelerator while maintaining big ears Stable flight A Stable flight A 23. Alternative means of directional control - 4.4.22 180° turn achievable in 20 sec Yes A Yes A Stall or spin occurs No A No A No A 23. Any other flight procedure and/or configuration described in the user's manual - 4.4.23 Procedure works as descibed NA NA Cascade occurs NA NA NA | Behaviour during big ears | | · · | | Α | Stable flight | | | Α | |
| Dive forward angle on exit 0°-30° A Behaviour immediately after releasing the accelarator while maintaining big ears Stable flight A A Stable flight A Stable flight A A Stable flight A Stable flight A Stable flight A A Stable flight A A Stable flight A Stable flight A Stable flight A A Stable flight A A Stable flight A A Stable flight A Stable flight A A Stable flight A | Recovery | | | | Α | Spontaneous in 3 to 5 sec | | | Α | |
| Behaviour immediately after releasing the accelerator while maintaining big ears Stable flight A Stable fl | · | | * | | | • | | | | |
| 23. Alternative means of directional control - 4.4.22 180° turn achievable in 20 sec Yes A Yes A Yes A Stall or spin occurs No A No A 23. Any other flight procedure and/or configuration described in the user's manual - 4.4.23 Procedure works as described NA NA Cascade occurs NA | Behaviour immediately after releasing the accelarator while | | | | | | | | | |
| 180° turn achievable in 20 sec Yes A Yes A Stall or spin occurs No A No A 23. Any other flight procedure and/or configuration described in the user's manual - 4.4.23 Procedure works as descibed NA NA Procedure suitable for novice pilots NA NA Cascade occurs NA NA | | 1 4 00 | Judoio iligin | | | ,, | Judoio iligili | | | ,, |
| Stall or spin occurs No A No A 23. Any other flight procedure and/or configuration described in the user's manual - 4.4.23 Procedure works as described NA NA Procedure suitable for novice pilots NA NA Cascade occurs NA NA | 23. Alternative means of directional control - 4 | 1.4.22 | 1 | | | | 1 | | | |
| 23. Any other flight procedure and/or configuration described in the user's manual - 4.4.23 Procedure works as described NA NA Procedure suitable for novice pilots NA NA Cascade occurs NA NA NA | 180° turn achievable in 20 sec | Yes | | | Α | Yes | | | Α | |
| Procedure works as described NA NA Procedure suitable for novice pilots NA NA Cascade occurs NA NA | Stall or spin occurs | | No | | | Α | No | | | Α |
| Procedure suitable for novice pilots NA Cascade occurs NA NA NA NA | | ation des | cribed in the user | r's manual - 4.4. | 23 | | | | | |
| Cascade occurs NA NA | | | | | | | | | | |
| | | | | | | | | | | |
| L | 24. Remarks of testpilot: | | | | | | | | | |
| | | | L | | | | L | | | |

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