

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

|  |  |                       |                     |
|--|--|-----------------------|---------------------|
| Manufacturer                           | <b>Niviuk Gliders / Air Games S.L.</b>                             | Certification number  | PG_1697.2020        |
| Address                                | C. Del Ter, 6 Nave D<br>17165 La Cellera de Ter<br>Girona<br>Spain | Flight test           | 12.03.2020          |
| Glider model                           | <b>Ikuma 2 P 28</b>  | <b>Classification</b> | <b>B</b>            |
| Serial number                          | PI460891   | Representative        | None                |
| Trimmer                                | no   | Place of test         | Villeneuve          |
| Folding lines used                     | no   |                       |                     |
| <b>Test pilot</b>                      |  | Alain Zoller          | Anselm Rauh         |
| <b>Harness</b>                         |  | Advance - Success 4 L | Supair - Evo XC 3 L |
| <b>Harness to risers distance (cm)</b> |  | 44                    | 44                  |
| <b>Distance between risers (cm)</b>    |  | 44                    | 48                  |
| <b>Total weight in flight (kg)</b>     |  | 95                    | 115                 |

|  |  |   |  |   |
|--|--|---|--|---|
| <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>B</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 | 25 km/h to 30 km/h   | B |
| <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 | not available  | 0 |
| <b>Max. weight in flight greater than 100 kg</b>                       |  |   |  |   |
| Symmetric control pressure / travel                                    | not available  | 0 | Increasing / greater than 65 cm                                | A |
| <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>                         |  |   |  |   |
| 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>                                 |  |   |  |   |
| 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>                          |  |   |  |   |
| 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>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 15° to 45°                                  | 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 15° to 45°                                  | A | Less than 90° / Dive or roll angle 15° to 45°                                  | 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>Small asymmetric collapse with fully activated accelerator</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 with fully activated accelerator</b>                         |  |   |  |   |
| Change of course until re-inflation / Maximum dive forward or roll angle                  | 90° to 180° / Dive or roll angle 15° to 45°                                    | B | 90° to 180° / Dive or roll angle 15° to 45°                                    | B |
| 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>15. Directional control with a maintained asymmetric collapse</b>                      |  |   |  |   |
| 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 |
| <b>16. Trim speed spin tendency</b>   |  |   |  |   |
| Spin occurs   | No   | A | No   | A |
| <b>17. Low speed spin tendency</b>  |  |   |  |   |
| Spin occurs   | No   | A | No   | A |
| <b>18. Recovery from a developed spin</b>   |  |   |  |   |
| 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 |
| <b>19. B-line stall</b>   |  |   |  |   |
| 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 |
| <b>20. Big ears</b>   |  |   |  |   |
| 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 |
| <b>21. Big ears in accelerated flight</b>   |  |   |  |   |
| 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>                                       |  |   |  |   |
| 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> |  |   |  |   |
| 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>   |  |   |  |   |